

THE

D E N T A L

Digest

FEB 20 1943

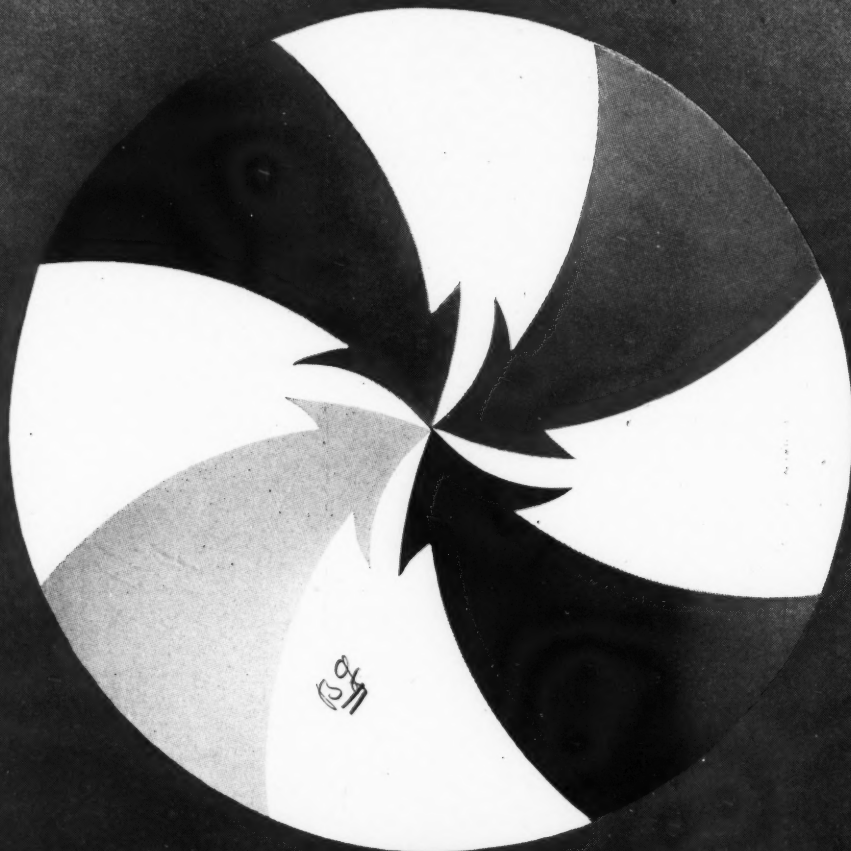


JANUARY 1943



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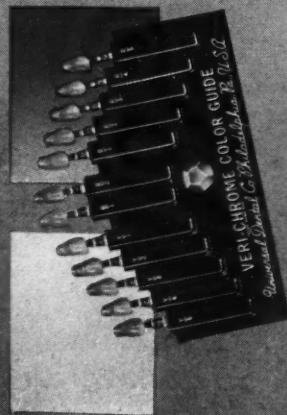
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THE D E N T A L *Digest*

VOL. 51

NO. 1

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WILLIAM I. OGUS, D.D.S., is a graduate of George Washington University, the class of 1917. Since 1924 Doctor Ogus has been developing electrosurgical techniques for dentistry and is the director of a post-graduate school on the subject. He last wrote for us on ELECTROSURGERY IN DENTISTRY in September 1942. He discusses the electrosurgical method of exposing the third molar early to prevent infection and impaction.

LIEUTENANT COLONEL KEITH DEVOE (DC) AUS received his D.D.S. from the Ohio State University, College of Dentistry, in 1927. Before entering military service, Colonel Devoe was engaged in exodontia and oral surgery. CAPTAIN HURLEY L.

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MOTLEY (MC) received his A.B. (1930), A.M. (1932), and Ph.D. (1934) from the University of Missouri, and his M.D. (1936) from Harvard University, Medical School. He is on leave of absence from the University of Missouri Medical School where he was an associate professor. These co-authors present the results of their study

of AERODONTALGIA in 62,160 trainees at the Altitude Training Unit, Maxwell Field, Alabama.

SAMUEL LEWELLEN BORDER, D.D.S. (Indiana University, School of Dentistry, 1934) is a general practitioner. Doctor Border describes his technique for COMPRESSION MOLDING OF ACRYLIC DENTURES.

GREGORY B. SALISBURY, D.D.S. (Temple University, School of Dentistry, 1934) emphasizes jacket restorations in his general practice. Doctor Salisbury has written numerous articles for us on direct acrylic restorations. This month he presents a COPPER BAND IMPRESSION TECHNIQUE FOR JACKET CROWN RESTORATIONS.

Early Exposure of the Third Molar to Prevent Infection and Impaction*

WILLIAM I. OGUS, D.D.S., Washington, D. C.

The third molar, if brought into normal occlusion and alinement, is a useful tooth. Early exposure of the tooth will prevent infection and will permit normal eruption. Electrosurgery is suggested as the method of choice for this operation.

Treatments Offered

The permanent teeth erupt normally in most instances; the frequent exception exists in the eruption of the third molar. A large number of third molars become either infected or impacted, or both; few erupt uneventfully. The reports of many investigators who have attempted to solve this problem have terminated in the recommendation that the third molar should be extracted.

Prophylactic Removal of Third Molar—Rice¹ has presented a technique for the "prophylactic" removal of the third molar in patients in the fifteen-to-seventeen age group to prevent impaction. The technique for this removal was practical, but the authors overlooked the fact that some third molars erupt normally and serve a useful purpose.

Extraction of Third Molar for Caries Prevention—Bourgoyne of Tufts Dental School reported on the EARLY REMOVAL OF THE THIRD MOLAR TO PREVENT CARIES.² This seems to give unanimous agreement to the extraction of erupted and unerupted third molars.

Extraction of Second Molar—In

the early twenties, Horace Davis³ stated that the third molar lacked room in the arch for normal eruption, and he offered as a solution the removal of the second molar to create room for the eruption of the third molar. Sacrificing a good second molar for a third molar, however, was not favorably accepted.

The combined reports have led the profession as well as the public to believe that the third molar is a tooth devoid of function—a theory to which I cannot subscribe.

Advantages of Retaining the Third Molar

Eliminating the possibility of infection accompanying eruption, there are many reasons for retaining the third molar which is in normal alinement and occlusion:

1. It stabilizes normal contact and occlusion by forward pressure. This is illustrated by the crowding of anterior teeth caused by undue pressure created by the third molar. We often are asked to remove the third molar to correct this crowding of the anterior teeth.

2. In case of loss of the second molar, the third molar can be used as an abutment for a fixed or a removable bridge; otherwise the second molar cannot be replaced inasmuch as a unilateral replacement is worthless.

3. If the third molar is removed, the occluding tooth then elongates, contact is lost, and the foundation is laid for a periodontal involvement in that area.

4. The loss of the second and third molars on one side has been the cause of changes in temporomandibular articulation which lead to many complications.

5. Many extractions of the impacted third molar done by an untrained operator have resulted in injury to the second molar, often in its loss. Injury to the mandibular nerve or fracture of the mandible have resulted often. The possibility of injury to the mandibular nerve in exposing the third molar before or early in eruption is prevented inasmuch as the nerve is not approached in this operation.

Findings of Studies

This report is on the preservation of the third molar by early exposure of the crown in patients in the fifteen-to-sixteen age group (Fig. 1). The tooth is not impacted at this stage, and the roots are undeveloped. For the last seventeen years, I frequently have exposed partly erupted third molars, and have exposed unerupted teeth in the fifteen-to-sixteen age group (Fig. 2) for the last seven years (over 100 cases).

Let us consider a case in which one of similar bilateral unerupted teeth has been exposed and the other not touched: The findings are that the exposed tooth will differ in the formation of its roots. The exposed tooth will erupt uneventfully while the undisturbed tooth becomes either impacted or infected in its attempt to erupt.

The measurements of the mandible remain the same on both sides despite the fact that one side retains an impaction and the other side a normal tooth. It is found that by exposure of the impacted third molar, both molars erupt similarly. The speed with which a tooth erupts following exposure is phenomenal. Patients for whom impacted third molars have been exposed at fifteen

*Read before the American Society of Oral Surgeons, Chicago, October 13, 1944.

¹Rice, Stanley: Prophylactic Odontectomy of Third Molars Showing Tendency to Impaction, *THE DENTAL DIGEST*, 46:233-238 (July) 1940.

²Bourgoyne, J. R.: Early Removal of Third Molars to Prevent Caries, *THE DENTAL DIGEST*, 50:108 (March) 1944.

³Davis, H. M.: Importance of Early Study of the Third Molar, *J.A.D.A.*, 19:843-848, 1932.

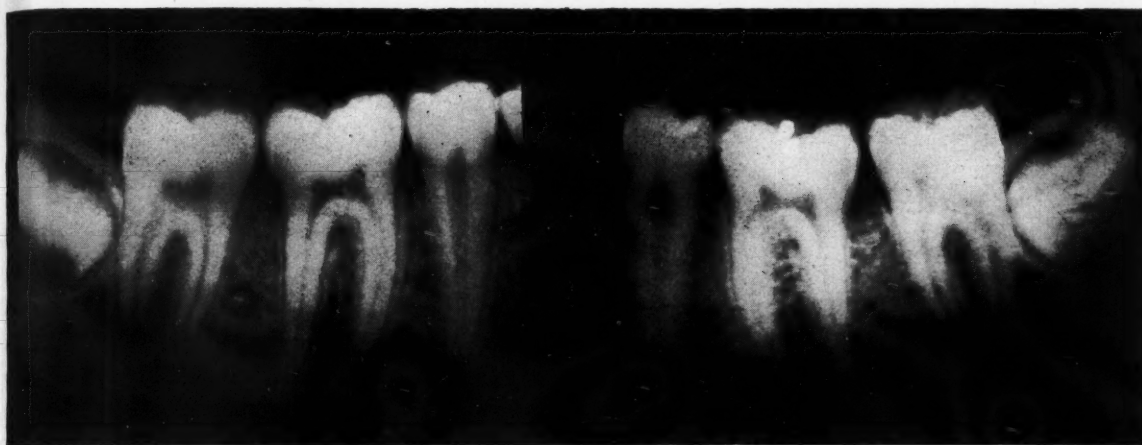


Fig. 1—Appearance of teeth in the 15-16 age group. Teeth are not impacted, and roots are not formed.

years of age have a fully erupted tooth at sixteen although the roots are not fully formed. The tooth on the opposite side of the jaw makes little progress in eruption during the same period. Figures 3 and 4 show the results of similar treatment in a nineteen-year-old patient.

Technique

Although this operation can be done with the scalpel, I have taken advantage of the fundamentals presented by electrosurgery: The electrosurgical knife coagulates and sterilizes as it cuts. It minimizes the possibility of infection, controls hemorrhage, and prevents regrowth of tissues. Moreover, healing is more rapid when electrosurgery is used in exposing the third molar.

1. An outline incision is made first

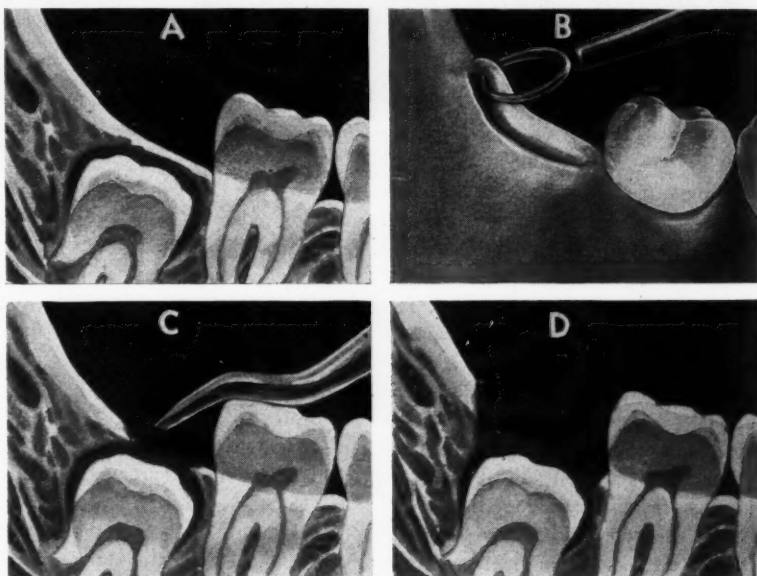


Fig. 2—A, Unerupted third molar (age 15-16); B, removal of tissue with a loop electrode; C, removal of bone with a sharp chisel; and D, exposure of crown of unerupted tooth.

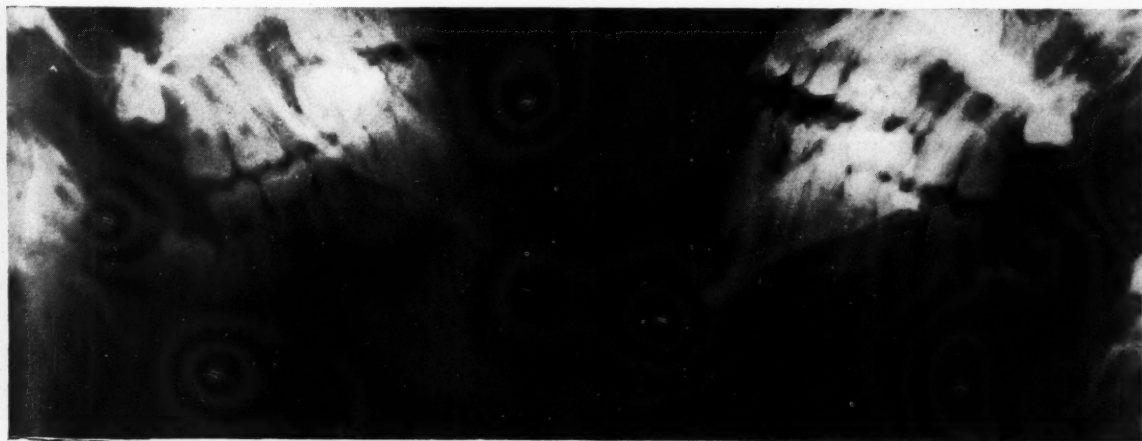


Fig. 3—Dental roentgenograms of 19-year-old patient before surgical exposure of right third molar.

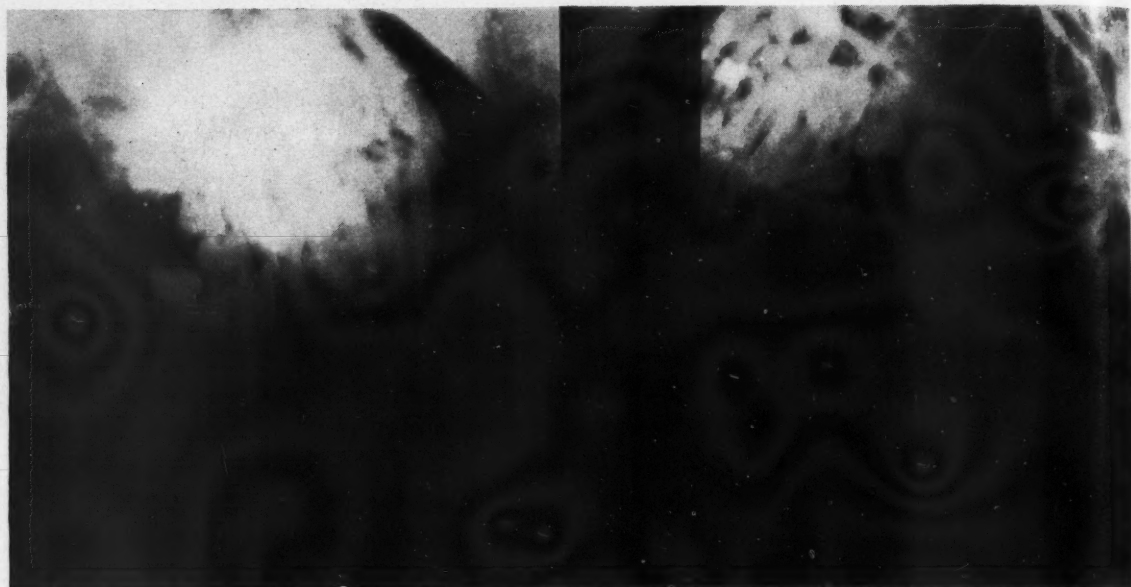


Fig. 4—Roentgenograms of patient at age of 21. The right third molar was exposed and it erupted into normal position. The left third molar was not treated and it failed to erupt normally.

through the periosteum to the osseous structure with the electric needle.

2. The severed mass of tissue is removed with either a periosteal elevator or a large loop electrode. The osseous structure is then removed with a sharp chisel. Removal of the osseous material should include the distal relief when necessary. The developmental sac covering the crown is removed likewise, thus exposing the occlusal surface of the tooth.

3. The operation for exposure remains the same in an older patient in whom the third molar shows signs of mesio-angular impaction (Fig. 5). A sharp instrument is forced through below the contact with the second molar.

4. A double strand of 20-gauge wire is inserted through the opening, and the ends are twisted in opposite

directions. This creates an orthodontic wedge. A piece of rubber is substituted later.

5. In two to three weeks the tooth is relieved from impaction and erupts normally.

Postoperative Result—The postoperative result can be compared favorably to a clean extraction of an impacted third molar. It is not uncommon to have soreness, inability to open the mouth normally, or difficulty in swallowing on the affected side, but complications from infection are absent. Pain is controlled by swabbing the wound with 10 per cent tannic acid and by the use of sedatives. Irrigation with a mild mouthwash adds to comfort.

Comments

Teeth move when relieved from

impaction even if they have stayed fully formed or developed in one position for years. Just as an impacted cuspid will erupt when exposed for orthodontic reasons, an impacted third molar will erupt after the second molar has been removed. Likewise, impacted teeth erupt in edentulous mouths following the extraction of teeth and the placing of dentures.

The impaction of teeth in most instances does not result from lack of room in the mandible. It probably results from our present mode of living on a "mush" diet; the third molar area does not get sufficient exercise to aid the erupting tooth in resorbing the osseous structure covering it. If the tooth does resorb the osseous structure, a more complicated problem may begin in the tissue covering. A break in the tissue lends

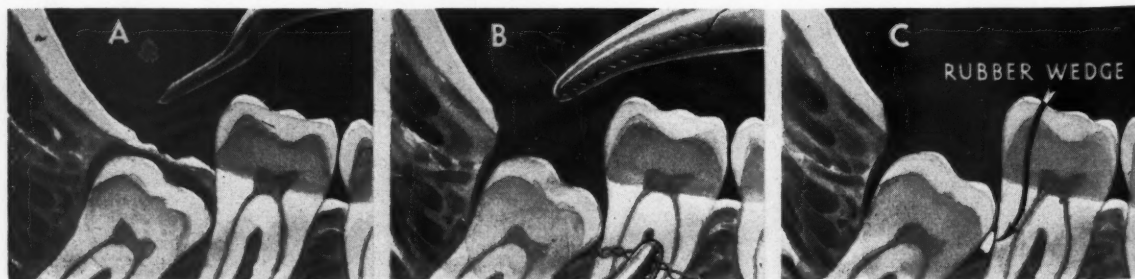
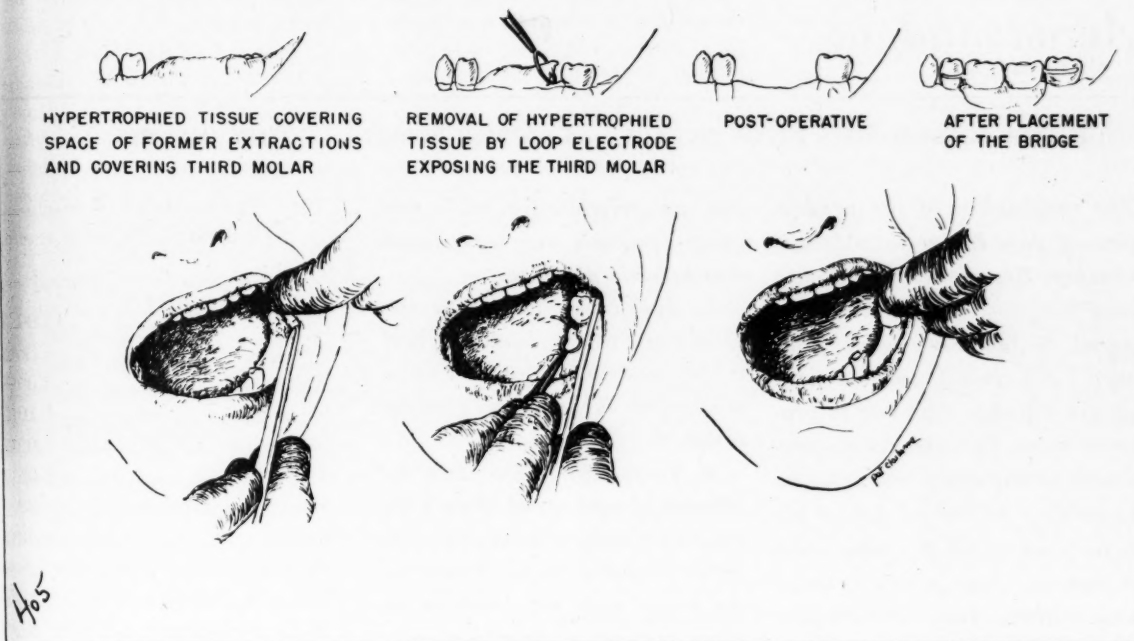


Fig. 5—Exposure of an unerupted third molar with a tendency toward mesio-angular impaction. A, Removal of bone with a chisel; B, creating an opening between contacts of teeth and placing wire through opening; C, rubber wedge at contacts of teeth to secure separation.

CREATING ROOM FOR INSERTION OF A BRIDGE



itself to the invasion of microorganisms and makes a fine culture medium, and the acute and chronic complications will follow.

In recent years I have observed some second molars with complications in eruption identical to those of the third molars; nevertheless, one

would hesitate to recommend extraction of the second molar.

1832 Eye Street, N. W.

Fluorine Program in Michigan

GRAND RAPIDS has been chosen for a carefully controlled experiment in dental caries under the auspices of the Michigan Department of Health, the United States Public Health Service, and the University of Michigan School of Dentistry. The experiment will include the addition of 1 part per million of sodium fluoride to the municipal water supply artificially to determine whether a reduction can be made in dental caries. A careful clinical and bac-

terial examination of the saliva of Grand Rapids school children will be made first to establish a base line before the fluorine is put in the water.

This study arises from the belief that mottled dental enamel occurring in certain areas of the country is caused by fluorine in the drinking water. The mottling occurs only when the crowns of the teeth are forming. Investigations have shown much less dental caries in these areas than

where there is no fluorine or only a trace of it in the drinking water. Further studies have shown that in areas having from 0.5 part to 1 part per million of fluorine in the municipal water supply there was a 50 per cent to 60 per cent reduction in dental caries. This amount of fluorine was not, however, sufficient to cause mottled enamel.

—From Medical News, *Journal of the American Medical Association*, 126:40 (September 2) 1944.

Aerodontalgia

LIEUTENANT COLONEL KEITH DEVOE (DC) AUS, and CAPTAIN HURLEY L. MOTLEY (MC) RES.

The mechanism of the production of pain in aerodontalgia is obscure. Hyperemia of the pulp may be present and, when exposed to low barometric pressure, will result in increased pressure within the tooth to produce pain. No evidence is presented in our study series that an expanding bubble of gas or air is responsible for the pain. Aerodontalgia often occurs at pressure altitudes below 18,000 feet. Nitrogen bubbles do not form in the body under 18,000 feet; therefore, they cannot be a cause of aerodontalgia. When it occurs above 18,000 feet, the onset of aerodontalgia is rapid and without the latent interval characteristic of other symptoms of aeroembolism. The following conclusions can be made:

1. Aerodontalgia is an independent entity which may occur at any altitude and with other reactions due to reduced barometric pressure. The toothache

has no relationship with any other reactions due to reduced atmospheric pressure.

2. Apical involvement is the chief cause of aerodontalgia, and a restoration placed over a pulpal exposure is the second greatest cause.

3. Teeth with the highest incidence of caries and those with most restorations have most frequent aerodontalgia. Teeth in the lower arch are involved as often as those in the upper arch.

4. Aerodontalgia may occur for a few weeks in a tooth recently restored and then may disappear. Aerodontalgia in teeth with old restorations indicates that dental treatment is necessary.

5. An oxyphosphate cement base is imperative under all restorations in deep-seated cavities. Zinc oxide-eugenol paste or some other suitable nerve-capping material should be used when the cavity approaches the area of the pulp.

AERODONTALGIA is one of the complications resulting from exposure to reduced barometric pressure in low pressure chambers and on plane flights. It is a problem that probably will continue in commercial and civilian flying even after the War.

Reactions in Low Pressure Chambers

At the Altitude Training Unit, Maxwell Field, Alabama, toothache

ranks fifth in frequency of all reactions reported as complications from exposure to reduced air pressure on simulated chamber flights. Trainees are taken to a maximum of 38,000 feet simulated altitude in the low pressure chambers; a greater part of the time is spent at 30,000 feet. A total of 62,160 trainees, all Army personnel, received altitude indoctrination in the low pressure chambers from July 1, 1943 to July

1, 1944. The incidence of reactions, from the mildest to the most severe, follows:

Bends	13.00%
Aerotitis	7.86%
Abdominal distress	4.00%
Sinus pain	1.10%
Toothache	1.02%
Skin reactions	1.00%
Vasomotor instability33%
Chokes28%
Anoxia25%
Visual disturbance15%
Hyperventilation05%
Total	29.04%

Toothache in the Low Pressure Chamber

At the Altitude Training Unit all trainees who experience toothache of any degree in the pressure chamber are reported, and a form which contains the following data is filled out:

1. Altitude at which the toothache started.
2. Increasing or decreasing severity with altitude.
3. Whether or not descent was required.
4. Altitude at which toothache stopped.
5. The type of pain present.

The trainee is sent directly to the dental clinic for the necessary treatment. A thorough oral examination is made, and the aching tooth is charted as follows: The occlusion is noted; and the history of the tooth, with a description of the cavity, roentgenographic findings, and treatment, is recorded on the lower part of the form. Subsequent data on all re-runs in the chamber is attached or recorded later on the original form.

Series Study of Aerodontalgia

A detailed study has been made by the Dental Corps at Maxwell Field on all cases of aerodontalgia occurring in the low pressure chamber over a period of four months, from January 27 to May 27, 1944. During this period, 16,631 trainees were subjected to chamber flights. One hundred thirty-six, or 0.8 per cent, reported toothache and were examined by Dental Corps officers. Twenty-eight of the 136 were not included in the detailed dental study because of the lack of the necessary re-run to test the effectiveness of the treatment.

A check was made in this series to correlate other types of low pressure reactions which might occur at the same time as the toothache. Thirty-five trainees had other low pressure reactions as well as toothache; all other trainees in this series had toothache alone. In most instances the reactions occurred on different chamber flights; however, in a few cases the other reactions were coincident with the toothache.

Bends—Thirteen trainees had a record of both bends and toothache. They made a total of thirty-four chamber flights, and in only six instances did bends and toothache occur together on the same flight. The toothache occurred at a lower altitude than did the bends in all six cases, and in three the toothache developed below the altitude level at which bubble formation starts (at 18,000 to 20,000 feet at Maxwell Field.)

Aerotitis—Thirteen trainees had both aerotitis and toothache. These thirteen made a total of twenty-five chamber flights, and in only five instances did aerotitis and toothache occur together on the same flight. The toothache occurred first in each instance and at a much higher altitude than did the aerotitis which developed only on descent.

Sinus Pain—Seven trainees had both sinus pain and toothache. They made a total of seventeen chamber flights, and only three had toothache and sinus pain together. One trainee had an exposed pulp, and the tooth

was extracted. Another trainee had toothache in two lower teeth, one on each side; these had defective restorations. The third had toothache in an upper tooth at 18,000 feet, and sinus pain at 12,000 feet on descent. No cause was determined from examination, and the roentgenogram was negative. At a later run no pain was present.

Abdominal Distress—Toothache and abdominal distress occurred in only one subject at 30,000 feet.

Conclusions—As far as can be determined from this series, there is no relationship between toothache and other low pressure reactions. Toothache is an independent entity which may occur with other reactions due to reduced pressure.

Group I Reactions

We were able to place the dental reactions in the study into two definite groups. The first group showed periapical abscess on roentgenographic examination, or disclosed exposure of the tooth pulp on removal of the restoration. Sixty-eight, or 62.9 per cent, of the 108 cases were in this group. The sixty-eight in this group had eighty-two teeth extracted; these again fell into two distinct classes:

Class I—It was found on roentgenographic examination that forty-five teeth, 54.8 per cent, were extracted because some pathologic condition was manifested at the apex, either a thickening of the periodontal membrane or a definite localized periapical abscess. Six teeth in this group had a history of trauma about six months before which resulted in periapical abscesses.

Class II—In the second class in this group, roentgenographic examination did not disclose a pathologic condition. On removal of the restoration, however, it was found that it had been placed over a pulpal exposure; sometimes the amalgam had been packed directly into the pulp chamber. At other times an oxyphosphate cement restoration had been placed over the exposure. In some of these the pulp was still vital and in others it had become putrescent.

Thirty-five teeth, 42.7 per cent, were extracted for these reasons.

Two unerupted or partly impacted third molars were causing pain and had to be extracted. These teeth did not have restorations or cavities. It is felt that this number was not large enough to consider as a definite class. Roentgenography did not disclose pathologic conditions, and neither patient gave a history of pericoronitis.

Occurrence of Pain—In Group I (in which teeth were extracted), twenty-four toothaches started under 10,000 feet, eighteen started between 11,000 and 20,000 feet, and twenty-six started over 20,000 feet. These toothaches stopped at various altitudes on descent. Seven continued at ground level, twenty-six stopped under 10,000 feet, thirteen stopped between 11,000 and 20,000 feet, and twenty-two stopped above 20,000 feet. Descent was required in thirty-nine cases. It was found that the pain increased with altitude in forty-six cases, the pain decreased with altitude in seventeen cases, and there was no change in pain with increasing altitude in twenty-three cases. The type of pain was described as sharp in thirty-seven instances, dull in sixteen, shooting in nineteen, soreness in four, localized in forty-two, and generalized in three.

Teeth Involved—It seems that a definite pattern is followed as to the teeth involved in Group I. Those teeth which had the highest incidence of caries or those with the most restorations had the highest incidence of aerodontalgia. The following are the number of times each tooth was involved:

	Upper	Lower
Central incisor	2	2
Lateral incisor	5	2
Cuspid	0	2
First bicuspid	8	3
Second bicuspid . . .	9	5
First molar	11	16
Second molar	3	12
Third molar	1	1

Group II Reactions

The second group were those cases in which roentgenography dis-

closed no pathologic condition at the apex and in which removal of the restoration or examination of the cavity did not disclose exposure of the pulp. Forty, 37.1 per cent, of the 108 cases fell in this group. It was more difficult to arrive at a definite classification in this group; however, they do fall within certain general classes. They will be discussed not as to the number of mouths but as to the number of teeth involved. Sometimes more than one involved tooth was found in the same mouth. In some instances one tooth was treated, and upon a re-run in the low pressure chamber another tooth would require treatment.

1. Twelve teeth had had amalgam restorations without a base being placed under the restorations. In each case the old restoration was removed, zinc oxide-eugenol paste was placed in the tooth over the pulp, and an oxyphosphate cement base and an amalgam restoration were inserted. Nine of these trainees experienced no pain upon a re-run at a later date. It was not possible to secure a re-run on three.

2. Three teeth which had defective restorations were properly restored with an oxyphosphate base and amalgam. No pain was manifested on a re-run.

3. On removal of the restoration in eight teeth, it was found that a base had been placed under the original restoration and that no caries was present. A zinc oxide-eugenol capping was placed over the pulp, and an oxyphosphate cement base and an amalgam restoration were inserted. In five cases a re-run manifested no pain. A re-run was not recorded in three cases.

4. In three teeth in which open cavities existed, the caries was removed and the teeth were restored with oxyphosphate cement bases and amalgam. They exhibited no pain on re-runs.

5. In three teeth it was found that the restorations were high. The high spots were relieved, and no pain was manifested on re-runs.

6. In three cases it was impossible to ascertain any cavities, and no restorations were present. At a later date one of the trainees manifested no pain on a re-run; we have no record of the other two.

7. One tooth manifested pain for ten or fifteen seconds. An examination disclosed no defects.

8. Two teeth with hypersensitive dentine were treated with silver nitrate, and there was no pain on a re-run.

Pain Dependent on Age of Restoration—The following cases show that there is a definite correlation between the length of time the restoration is in the tooth and the incidence of pain occurring at high altitude. Listed are seven cases which on the first flight manifested some type of pain; on a second flight no pain was manifested. The number of days between the insertion of the restoration and the first flight, and the number of days between the insertion of the restoration and the second flight, are shown.

Case Number	Days to First Flight	Days to Second Flight
1.....	10.....	59
2.....	7.....	31
3.....	10.....	60
4.....	7.....	30
5.....	37.....	45
6.....	7.....	48
7.....	5.....	15

No treatment was indicated in any of these cases and none was given; an oxyphosphate base had been placed under the restorations. It appears that in this group a hyperemic condition of the pulp was present at the time of the first flight. This condition subsided between flights, thus resulting in no pain on the second

flight. These teeth may be compared to teeth which are sensitive to hot and cold for the first few days after being restored.

Occurrence of Pain—In Group II seven toothaches started under 10,000 feet, eight started between 11,000 and 20,000 feet, and twenty-three started over 20,000 feet. The pain stopped in twenty cases above 20,000 feet, in five between 11,000 and 20,000 feet, and in seven under 10,000 feet; in six cases the pain persisted at ground level. In seventeen instances the pain increased with altitude; in nine it decreased with altitude; and in twelve, descent was required. The type of pain was described as sharp in fourteen instances, dull in fourteen, shooting in nine, throbbing in four, continuous in sixteen, and general in six.

Teeth Involved—Each tooth was involved the following number of times:

	Upper	Lower
Central incisor	2	1
Lateral incisor	4	0
Cuspid	1	1
First bicuspid	2	2
Second bicuspid ...	5	1
First molar	6	2
Second molar	3	6
Third molar	1	4

Trapped Air as Cause of Aerodontalgia

It has been the opinion of some dentists that one of the causes of aerodontalgia is the presence of air trapped under restorations. In an effort to prove or disprove this theory, we experimented with eight patients with one or more restorations each. The cavities were free from caries. A loose pellet of cotton was placed in the cavity nearest the pulp, and the restoration was placed over the cotton. In this way air was trapped under the restoration. When the patients were subjected to high altitudes, no pain occurred.

Unsolicited Manuscripts Are Welcome

"When you have made an observation of value or reached a conclusion concerning the unusual, publish it. Avoid carrying unpublished knowledge to the grave!"—Sir William Osler.

Compression Molding of Acrylic Dentures

SAMUEL L. BORDER, D.D.S., Monon, Indiana

Compression molding of acrylic dentures is recommended. The method is based upon the application of heat and pressure which transforms the polymer powder into a uniform solid.

COMPRESSION molding is the name applied to a process which is used extensively in making a wide variety of plastic objects. Almost all of the plastics, including acrylic polymer, are molded by this process. This method is based upon the application of heat and pressure which, in the case of acrylic, transforms the round grains of polymer into a uniform solid. Upon being cooled, acrylic objects so molded have the approximate hardness and density of acrylic which is cured from powder-liquid as in common acrylic denture molding.

Acrylic polymer becomes soft and

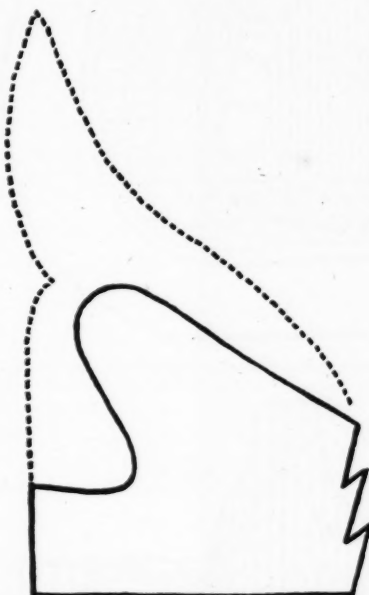


Fig. 2—Proper waxing over undercut.

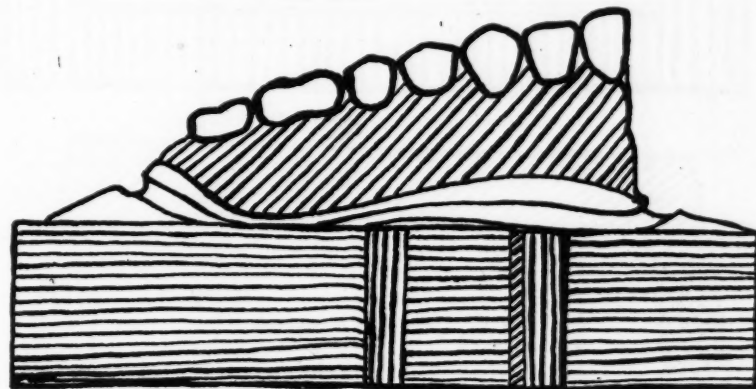


Fig. 3—Anterior portion of upper denture tilted upward.

tacky when heated to 350° F. and subjected to a pressure of 1,000 pounds per square inch. The tackiness is the result of a minute amount of monomer which is forced to the surface of each grain of polymer. As these soft, tacky grains are brought intimately together, they combine to

form a homogenous solid upon cooling.

Compression molding of acrylic dentures is patterned after the industrial method, the only difference being that the dental molds are made of hydrocol whereas industrial molds are of steel. The acrylic is softened by absorbing heat from the mold. The pressure is obtained by using an excess of acrylic, which resists the closing of the mold. By using a known excess of acrylic, any desired pressure may be obtained within the limits of the mold.

Advantages of Compression Molding

Compression-molded acrylic dentures are free from shrinkage, warpage, or distortion. These dentures are likewise free from other variables



Fig. 1—Improper waxing over undercut.

which are present when a plastic must be cured, as in the common use of powder-liquid, or cake form, acrylic. The uniformity of a compression-molded denture does not vary with the size, shape, or thickness of the denture. There is only a slight dimensional loss which is in propor-

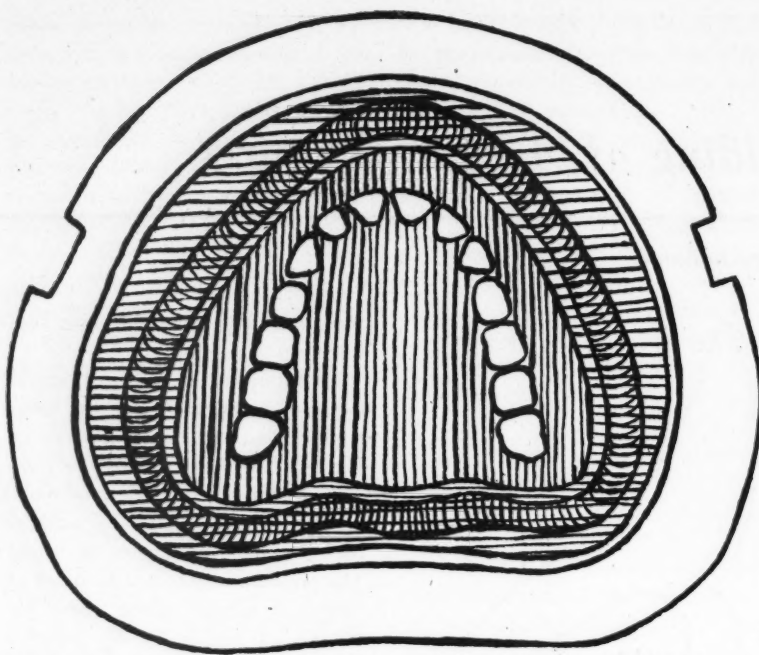


Fig. 4—Investment of the first half in a large flask with the location of the escape trench surrounding the wax pattern.

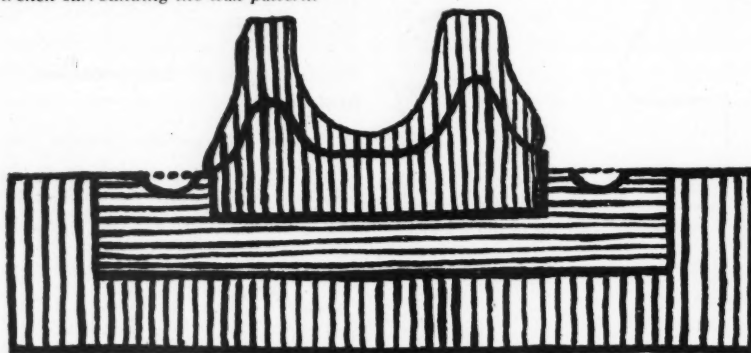


Fig. 5—Depth of escape trench filled with wax.

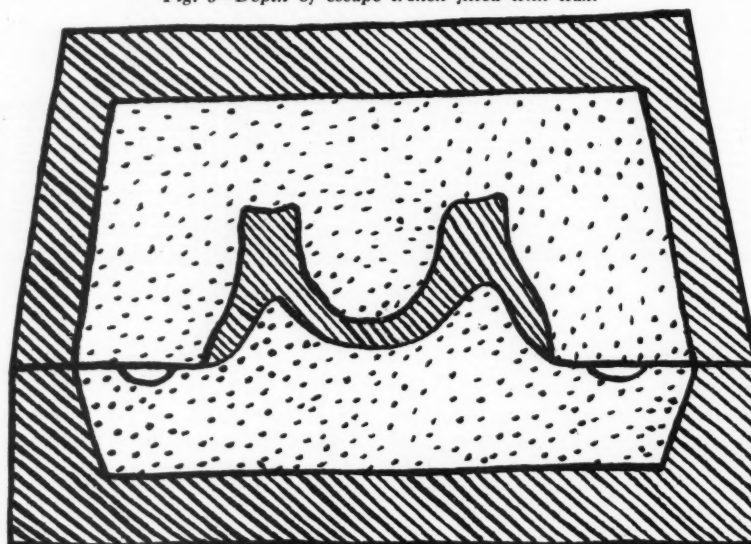


Fig. 6—Cross section of completed investment of case.

tion to the thermal expansion of the acrylic at the molding temperature.

Due to the inclusion of minute amounts of gas in the compression-molded denture, it has a somewhat higher impact strength than those cured from powder-liquid. For the same reason the compression-molded denture is slightly lower in tensile properties. The rate of water absorption and color life are the same.

Technique

1. The cast must be of pure hydrocol, such as castone, coecal, or nu-tek investment. The mix must be medium heavy, or about 26 cubic centimeters of water to 100 grams of investment. For best results, castone and coecal should be mixed as heavy as possible.

2. Because of the sluggish flowing quality of acrylic, the mold cavity must be prepared to facilitate the molding operation. The wax pattern must be prepared so that there will be no undercuts in the buccal and labial areas and in the lingual of lowers; this usually requires a greater thickness in the peripheral areas (Figs. 1 and 2). The added thickness is removed when the denture is polished.

3. Tin foiling is not required to protect the plastic. It is advisable to tin-foil, however, inasmuch as it promotes the flow of the plastic which tends to adhere to hydrocol.

4. A large flask is required so that the case can be invested at an angle. The anterior of uppers particularly should be tilted upward so that the anterior ridge will not be subjected to undue leverage when the flask is closed (Fig. 3).

5. The mold cavity must be sealed perfectly at the periphery when the flask is closed; nevertheless, provision must be made to permit the escape of the excess acrylic. This is done by preparing a trench in the investment of the lower half (Figs. 4, 5, and 6).

- a) Invest as usual, being careful not to cover any of the wax pattern, and tilting the anterior portion upward.

- b) While the investment is soft, use a round vulcanite scraper to pre-

pare a trench which completely surrounds the wax pattern. Have the trench about $\frac{3}{8}$ inch wide and $\frac{1}{8}$ inch deep in the center.

c) Leave a space of not more than $\frac{1}{8}$ inch between the trench and the wax pattern.

d) Fill the trench with wax.

6. The upper half is poured with investment of a heavy mix.

7. When the investment is completely set, place the flask in boiling water for three minutes, and separate. Discard the wax used for the excess trough but save all the wax used in the pattern; *this is important*. After three minutes of immersion, the wax should be soft enough to permit separation.

8. Weigh the wax pattern accurately to within $\frac{1}{10}$ gram, and record the weight (Fig. 7).

9. Clean the flask and the mold, and place in an oven and heat to 385° F.

10. The weight of the wax pattern is multiplied by $1 \frac{7}{10}$ (Fig. 8). The resultant sum is the weight of acrylic needed to fill the mold and to have an excess which will give resistance, or mold-closing pressure, of at least 1,000 pounds per square inch and not more than 2,500 pounds per square inch. The mold will withstand over 3,000 pounds per square inch.

11. Place the weighed portion of acrylic polymer in the flask which is now removed from the oven. Distribute the acrylic according to requirements and build heavily against the labial and buccal walls with a slight excess in the area of the vault center (Fig. 9). Return the flask to the oven for five minutes, during which the grains "sweat" and the mass becomes spongy. Then position the lower half, and place the assembled flask in the press and close slowly. During this operation, which lasts five minutes, the flask must be kept out of cool drafts. The flask press should be heated to from 200° F. to 250° F. before using. Wear muslin or asbestos gloves to protect the hands.

12. Close the flask evenly and slowly, taking six to eight minutes for the process. If one side is closed

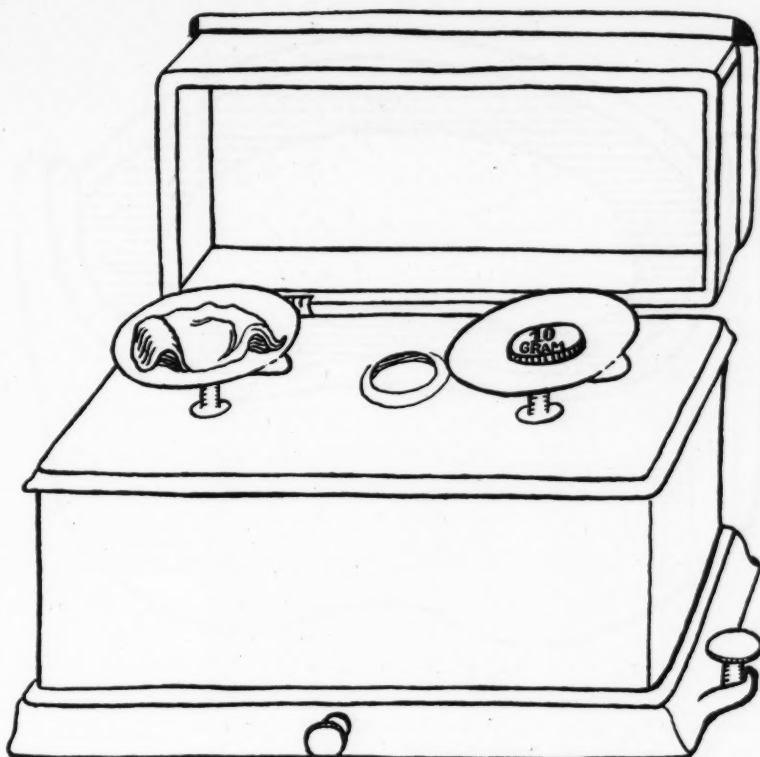


Fig. 7—Weight of wax removed from mold (10 grams average).

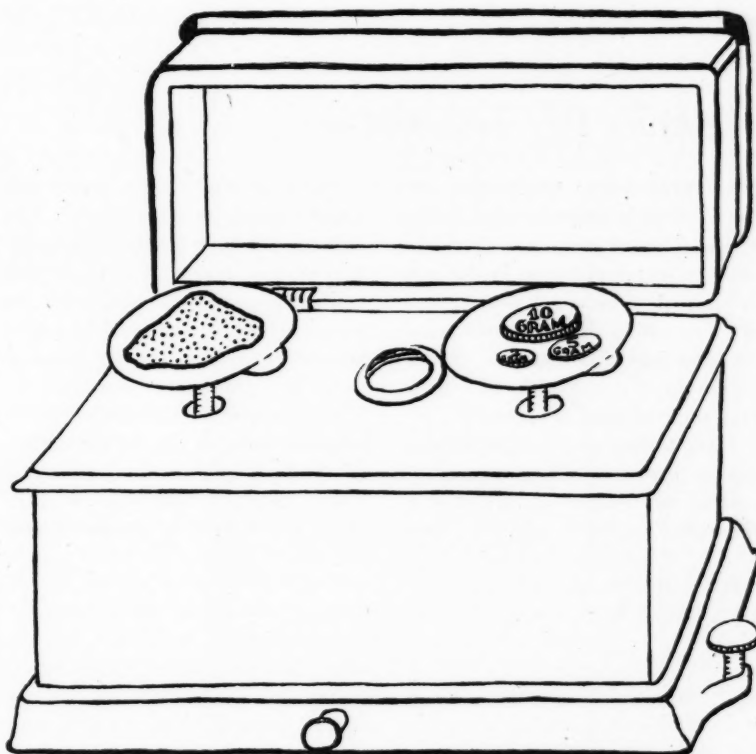


Fig. 8—Seventeen grams of powder are required for wax weight of 10 grams.

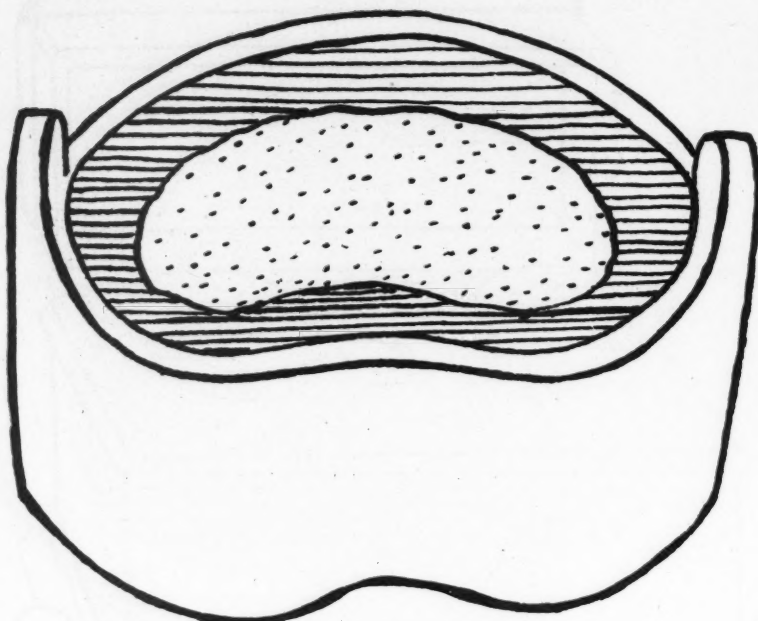


Fig. 9—Acrylic polymer in the upper half of the flask.

much in advance of the other, the case may be injured through leverage and abnormal pressure.

13. When the flask is closed completely, leave it in the press and place it in the oven which has been kept at

approximately 385° F. Leave the press and flask in the oven for twenty minutes to allow time for the plastic to settle and to become thoroughly uniform.

14. After twenty minutes, remove

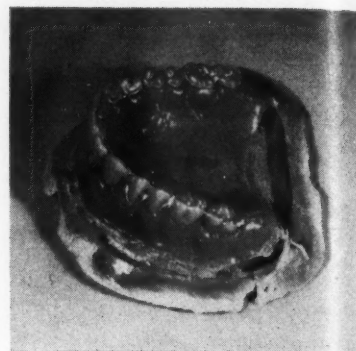


Fig. 10—Denture dug out of plaster, the excess resin still attached.

the press and flask from the oven. Leave the flask in the press for fifteen minutes to cool slowly in the air. Then place it in water and remove from the press when thoroughly cooled. The denture can be trimmed and polished immediately after removal from the flask.

The total time for the procedure is fifty-three minutes. Figure 10 shows the denture as it is dug out of the plaster, the excess resin still attached. Note the incomplete condensation of the material at the periphery of the excess trough.

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NO DENTAL author can ever be paid for a valuable technical or scientific article. The value of such material is above a monetary basis. In the preparation of a technical article, however, an author often expends money for drawings, photographs, models, or graphs. We would like to help defray some of these expenses.

Until further notice, THE DENTAL DIGEST will allow \$25.00 toward the cost of the illustrations provided by the author of every article accepted.

About 20,000 of our dental colleagues are in military service. Few of them will have the time, the facilities, or the opportunities to develop new techniques or to write for the dental literature. They will be eager, however, to read of the new developments in dental science and art.

Writing articles for publication in technical journals can be a contribution to the war effort, because that is how to help our dental officers in the Army and Navy keep abreast of tech-

nical advancements, and it is one way to improve the skill and services of the civilian dentists on the home front.

If you have a constructive idea, an innovation, a new result of tried and proved experiment, put it down in writing, illustrate it, and send the material to: The Editor of THE DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

We hope that you will accept this invitation!

A Copper Band Impression Technique for Jacket Crown Restorations

GREGORY B. SALISBURY, D.D.S., Philadelphia

The causes of faulty band impressions are listed, and an accurate impression technique for jacket crown restorations is described. Accuracy and carefulness are emphasized throughout the procedure, from the initial tooth preparation to taking the final plaster impression.

Causes of Faulty Impressions

Many dentists who make jacket crown restorations know little about taking a proper band impression. Failures generally are due to the following conditions:

1. Improper tooth preparations exhibiting pits, grooves, undercuts, bulges, and defective shoulders (Figs. 1 and 2). These make it impossible for the operator to make an accurate impression free of distortions.
2. Wrong size, contour, temper, and quality of the band (Figs. 3 and 4).
3. Improper manipulation of the compound.
4. Faulty seating, and careless holding and removing of the band impression.
5. Improper handling of the band in die preparation.

Impression Technique

Tooth Preparation—1. Reduce the incisal and proximal sides of the tooth to their approximate finished state. This is a most important procedure in order to adapt the copper band to the tooth.

2. Take a wire measurement of the gingival outline (Fig. 5). It is frequently necessary to remove the bulges of the labial and lingual surfaces

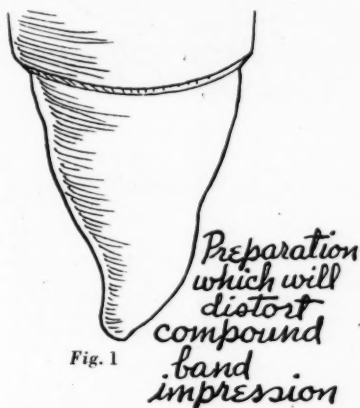


Fig. 1

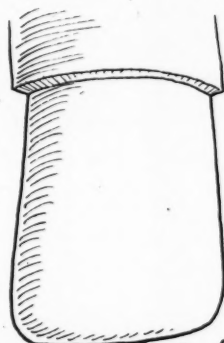


Fig. 2

of the tooth to facilitate removal of the wire measurement.

Preparation of Bands—1. Select two new copper bands of the correct size. They should be of 36-gauge copper and 1/2 inch long (Fig. 5).

2. Contour the bands to the outline of the gingival crevice (Fig. 6).

3. After the bands are properly shaped, heat them to a cherry red color (Fig. 7), and drop them into alcohol for sterilization and annealing (Fig. 8). It is taken for granted that the bands originally were sterile.

Purpose of Annealing—Annealing

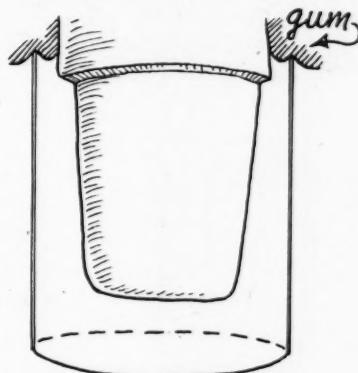


Fig. 3

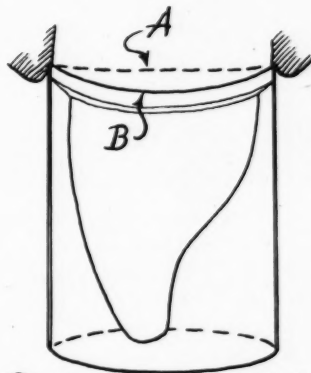


Fig. 4

is done after contouring. If the procedure is reversed, it will be most difficult to use revolving discs and stones on the softened metal; the

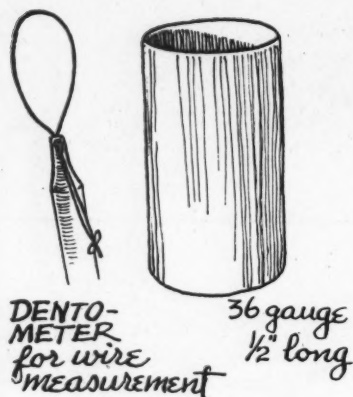


Fig. 5

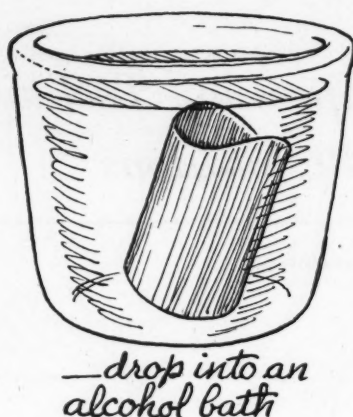


Fig. 8



Fig. 12

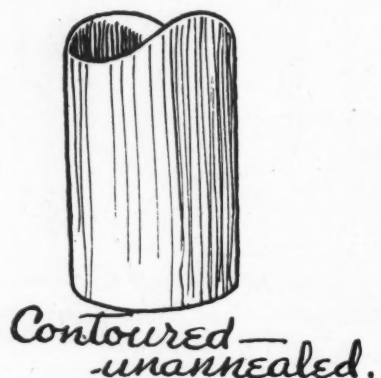


Fig. 6

Guide lines—

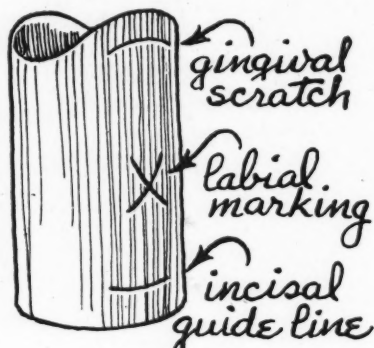


Fig. 9

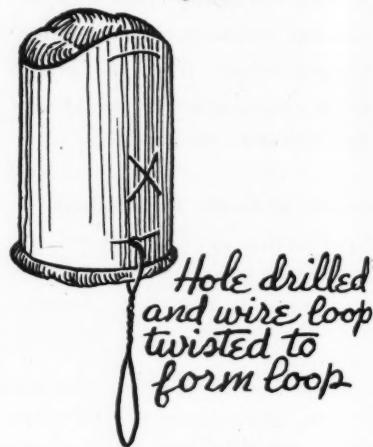


Fig. 13



Fig. 7



Fig. 10



Fig. 14

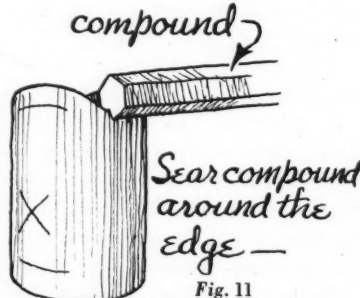


Fig. 11

metal will crease, alter its shape, and generally prove hard to handle. Annealing is done to prevent the metal from springing away from the thin compound in the shoulder area after removal of the band impression. This difficulty is common in indirect inlay procedures as well as in making jacket crowns. A snugly fitting band will expand a trifle after annealing.

This expansion will allow for a thin collar of compound beyond the shoulder area.

Guide Lines—Return the band to the mouth and scratch a line on the band where the gingiva touches the

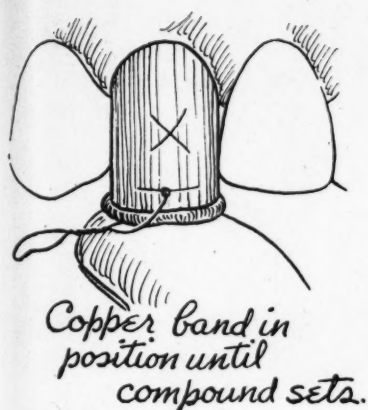


Fig. 15

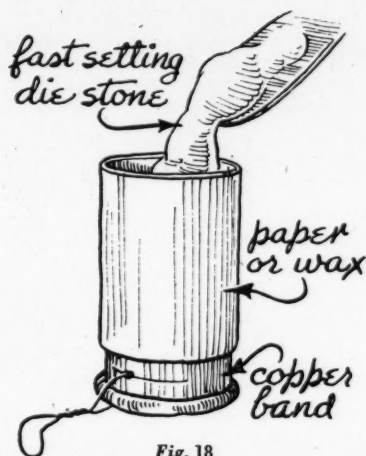


Fig. 18



Fig. 19



Fig. 16

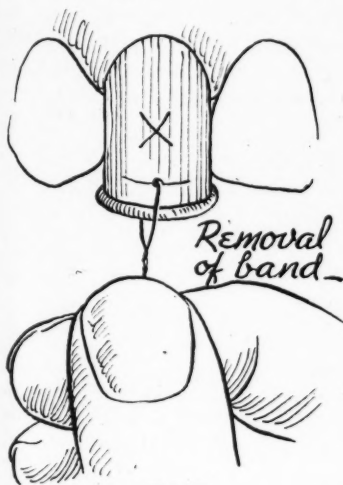


Fig. 17



Fig. 20—Prepared stumps before metal copings are applied.

Finishing the Stump—The preparation of the tooth is now completed, and the stump is properly finished to secure smoothness. A bite is taken to be sure that there is ample clearance.

Taking the Impression—1. Line the gingival margin of one of the copper bands with a varnish (Fig. 10).

2. Sear hot compound on the gingival edge to adhere tightly to the band (Fig. 11). This prevents curling of the thin compound at this point when the impression is removed.

3. Fill the band with compound (Fig. 12), and chill.

4. Drill a hole through the distal

end of the band. Pass a wire or a paper clip through the hole, and twist it to form a loop (Fig. 13). This will permit removal of the band from the tooth without distorting the impression. This is an important step inasmuch as many otherwise excellent impressions are ruined by forcefully rocking or pulling the band off the tooth stump.

5. Apply vaseline to the gingival surface of the compound. Heat the compound at a distance from the flame to prevent burning off ingredients of the material and to have a uniform softness of the impression compound (Fig. 14).

band when it is in proper position under the free margin of the gingiva. This is a guide line for the impression. Incisal guide lines likewise are made to correspond with the incisal edges of the adjacent teeth, and the labial surface is marked with a cross (Fig. 9). The same is done on the other impression band.

6. Dip in hot water to temper the compound and to prevent it from sticking to the tooth. Chill the extreme distal end by quickly touching it with cool water.

7. Have the patient lubricate the stump of the tooth with saliva. Slip the band up to the proper position on the stump with reference to the guide markings. The edge of the copper band should be $1\frac{1}{4}$ millimeters below the free margin of the gingiva, a trifle past the shoulder rim. Press the compound up firmly by the "plunger" of stiff compound at the other end of the band, and hold it steadily in place until the compound is definitely set (Fig. 15). Do not hurry the process. Chill (Fig. 16) and remove the impression by pulling gently on the wire loop in the direction of the long axis of the tooth (Fig. 17).

8. Take another copper band impression. Run this impression in a fast setting die stone (Fig. 18). When the die stone has set, dip the impression in hot water and separate. Wrap asbestos around the die, pour in low-fusing metal (Fig. 19), and chill. A metal coping is thus produced quickly. It is trimmed to fit proximally and is notched all over. The coping is placed on the stump (Figs. 20 and 21) and a plaster impression is taken. The coping will give a positive

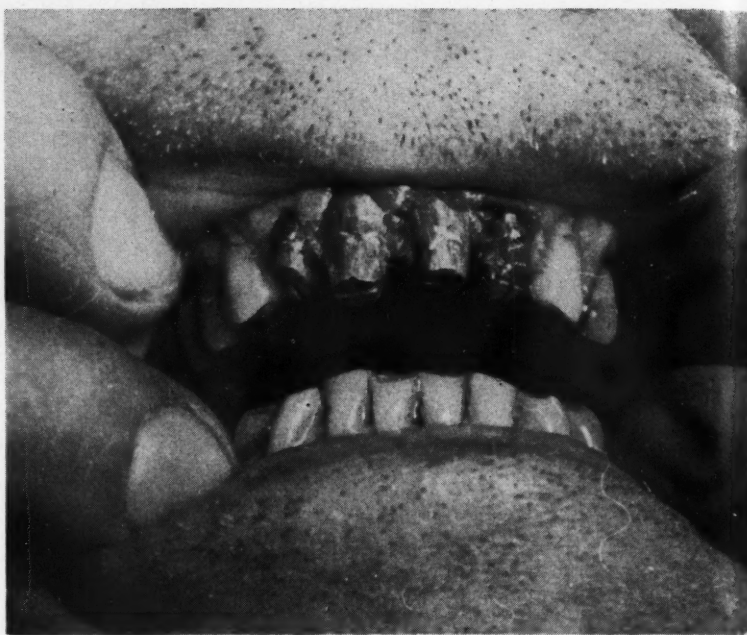


Fig. 21—Low-fusing metal copings in place on stumps.

seating for the copper-plated die and will eliminate jackets which look fine on the articulator but either protrude or are otherwise poorly positioned in the mouth. In making a bridge this is absolutely necessary.

Comments

If the copper band impression is to be sent out of the office, it must be wrapped carefully in cotton and placed in a small box separate from

other impressions. If a thin apron of compound is present (which should not be), one must be especially careful that it does not break off and carry with it a part of the shoulder area. The operator should always trim off surplus compound while the impression is being taken inasmuch as the excess frequently binds and prevents proper removal.

Forty-Ninth and Locust.

To Regular Subscribers Entering Service

SEVERAL YEARS ago we established the policy of sending *The Dental Digest* to regular subscribers entering service without further charge after their subscriptions expired. If you are entering service you are entitled to this consideration. In this event please let us have your civilian practice address along with your new address so that our records will be correct. Also keep us posted of any address changes. To date we are sending approximately twelve hundred copies to former subscribers each month.

The Editor's Page

HEMOSTASIS is as important in oral surgery as in any other kind of surgery. Although few fatal hemorrhages result from tooth removal, occasionally postoperative bleeding is severe and annoying. In hemophilia, bleeding after extraction may continue for days or weeks and may endanger life. The loss of the normal blood clot from the alveolus after extraction is a frequent clinical experience and results in an exasperating and painful dry socket. Dry socket is a localized osteitis in which the bared sensory nerves in the exposed bone are irritated by bacteria or by the products of food decomposition. The treatment of this condition has usually consisted of irrigation, packing with gauze impregnated with sedative drugs, and curettage to encourage new clot formation. Another form of treatment has recently been suggested by Elwell¹ who has had success in the use of autogenous blood infusions into the socket.

A new technique of hemostasis that has been used in neurosurgery may have wide application in oral surgery to control bleeding at the time of operation and postoperatively, and may be used advantageously in the treatment of dry socket. Ingraham and Bailey^{2,3} of Harvard Medical School have used the human fibrinogen and thrombin, which are made available in the fractionation of human blood plasma, to develop a hemostatic agent, "fibrin foam." This agent meets the criteria for satisfactory hemostasis: It is readily available; it is prompt in its action; it does not produce an unfavorable tissue reaction; it does not cause the formation of antibodies.

Fibrin foam appears as a honeycomb structure of fibrin with air spaces. When used as a hemostatic agent with thrombin, the air spaces fill with blood clot. The fibrin foam can be cut, broken, or modeled into any size or shape to conform to the bleeding surface. The fibrin foam retains its shape and adheres permanently to the bleeding surface. It becomes quickly organized into a living part of the tissue without irritation. Sulfadiazine and penicillin may be added to the fibrin foam without fear of unfavorable tissue reaction.

The technique for the use of fibrin foam in hemo-

stasis is described by Ingraham and Bailey as follows:⁴

"When fibrin foam is used as a hemostatic agent, three bottles are supplied. One of these contains sterile fibrin foam, another dried human thrombin, and the third 30 cc. of sterile isotonic solution of sodium chloride. At the time of use the saline solution is added to the dry thrombin; solution takes place rapidly. Pieces of fibrin foam are soaked in the thrombin solution and are then ready for use in hemostasis. The fibrin foam, which is firm and somewhat brittle in the dry state, becomes rubbery and shrinks as fluid enters the air spaces."

The use of fibrin foam following tooth extraction in hemophilia is described by Ingraham and Bailey in these words:⁴

"The prevention of hemorrhage in hemophilia has not yet been accomplished, despite numerous investigations in that direction. Surgeons faced with operations on patients suffering from that disease are confronted with a difficult problem in deciding whether it is more dangerous to forego operation or to chance the excessive bleeding which will inevitably result. This perhaps comes up more often with tooth extractions than in any other single type of procedure. When teeth are removed from patients with hemophilia, bleeding may continue for days or weeks despite packing and transfusions. It has been shown that rabbit thrombin controls such bleeding satisfactorily. Fibrin foam with thrombin has also proved to control the bleeding from the tooth sockets of patients with hemophilia quickly and completely, even when careful packing and repeated transfusions have proved ineffective.

"There is considerable oozing from the tooth sockets of patients who do not have hemophilia. The packing of these tooth sockets with fibrin foam soaked in thrombin has proved of considerable value even though the serious results encountered in hemophilia were not anticipated."

Although nothing has been published on the use of fibrin foam in the treatment of dry socket, this field should offer wide possibilities for clinical investigation.

¹Elwell, Kenneth R.: A New Approach to the Treatment of Dry Socket, J.A.D.A., 31:615 (May 1) 1944.

²Ingraham, F. D., and Bailey, O. T.: The Use of Products Prepared from Human Fibrinogen and Human Thrombin in Neurosurgery, J. Neurosurgery, 1:23-39 (January) 1944.

³Ingraham, F. D.; Bailey, O. T.; and Nulsen, F. E.: Studies on Fibrin Foam as a Hemostatic Agent in Neurosurgery, J. Neurosurgery, 1:171-181 (May) 1944.

⁴Ingraham, F. D., and Bailey, O. T.: Clinical Use of Products of Human Plasma Fractionation, J.A.M.A., 120:680-685 (November 11) 1944.

Editor's Note: In a personal communication from Doctor F. D. Ingraham on December 1, 1944, we were informed that Doctor Paul K. Losch, Department of Dental Medicine, Harvard Medical School, is carrying on some research on the use of fibrin foam in oral surgery.

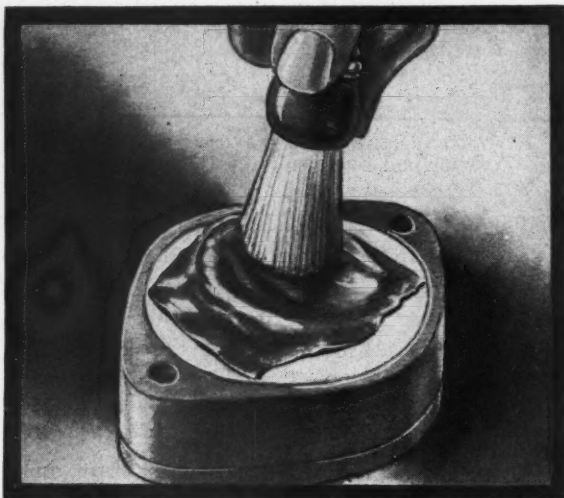


Fig. 1

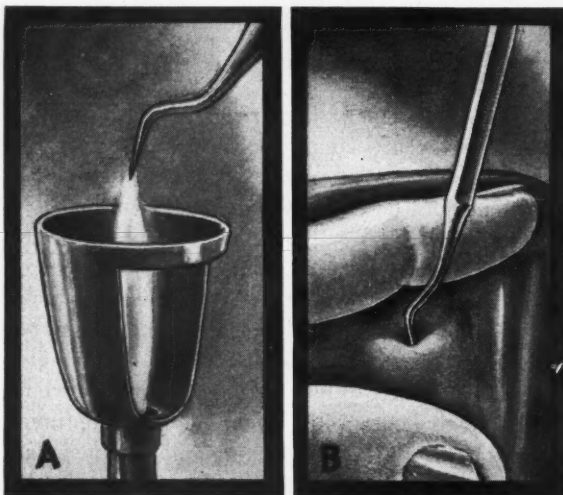


Fig. 2



Clinical and Laboratory

A Shaving Brush for Adapting Tin Foil to Model and Around Acrylic Teeth

Submitted by Dean C. Stevens, D.M.D., Whitefield, New Hampshire

Fig. 1—A discarded stiff bristle shaving brush with the bristles cut to a length of 1½ inches, well rounded at the ends, can be used effectively in adapting tin foil to a model or around acrylic teeth.

A Method of Stretching a Rubber Dam Without Tearing It

Submitted by Arthur D. Barber, D.D.S., Ogden, Utah

Fig. 2—A rubber dam, if it is old, can be stretched without tearing if a heated sharp instrument (A), instead of a punch, is used to make the holes (B) into the dam.

A Method of Establishing the Posterior Border for a Denture

Submitted by Virgilio Moojen de Oliveira, D.D.S., Rio de Janeiro, Brazil

Fig. 3—The exact posterior limit of an upper denture can be transferred to the impression by placing a single sewing thread at the posterior border, then reinserting the warmed preliminary impression into the mouth. The thread will impress itself on the modeling compound at the limit established in the mouth.

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SEWING THREAD

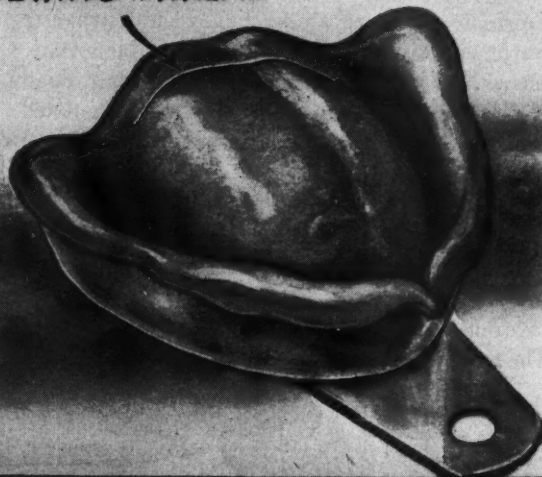


Fig. 3

Suggestions

A Container for Sterilized Needles

Submitted by Myrton J. Billings, D.D.S., Brooklyn

Fig. 4—Fuse one end of an empty, procaine tube, sterilize the tube, insert sterile cotton and sterile needles, and close the tube with one of the original rubber stoppers which has also been sterilized.

The Use of Tin Foil in Setting Inlays, Crowns, and Orthodontic Bands

Submitted by Miss Marian L. Ashford, Carrollton, Illinois

Fig. 5—A: Place a double thickness of tin foil (number 40 is preferred) on the restoration or inlay when cementing it in the tooth, and have the patient close the teeth in natural occlusion. The tin foil has a two-fold purpose: (1) It presses the inlay or restoration more nearly to place when the teeth are in occlusion; and (2) when it is pressed down on the labial and lingual and against the gingival tissue, it keeps the oral fluids away from the restoration. B: An orthodontic band, or a crown, is cemented firmly and securely if tin foil is placed between the finger and the band (or crown) before firm pressure is applied.

An Appliance for Administering Sulfonamides

Submitted by Lieutenant M. S. Weinstein (DC) USNR, Norfolk

Fig. 6—Pour the sulfonamide powder onto a sterile piece of gauze. Tap the end of a glass tube (which is fitted with a syringe bulb) into the mound of powder until the tube contains about $\frac{3}{4}$ inch of powder. Insert the tube into the tooth socket and squeeze the bulb to disperse the drug into all regions of the socket.

(Continued on following page)

we will make suitable finished illustrations. This shouldn't take ten minutes of your time.

Send your ideas to: Clinical and Laboratory Suggestions Editor, THE DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

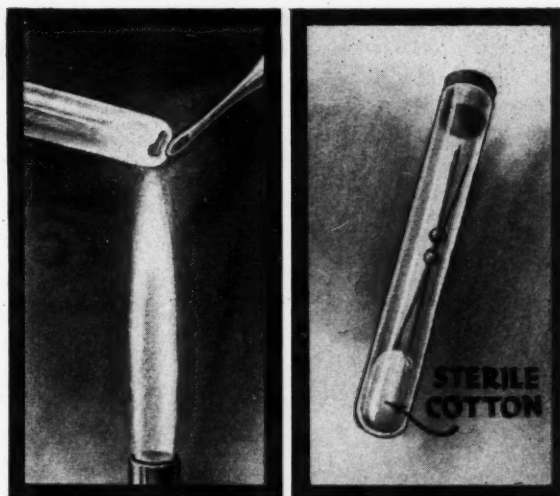


Fig. 4

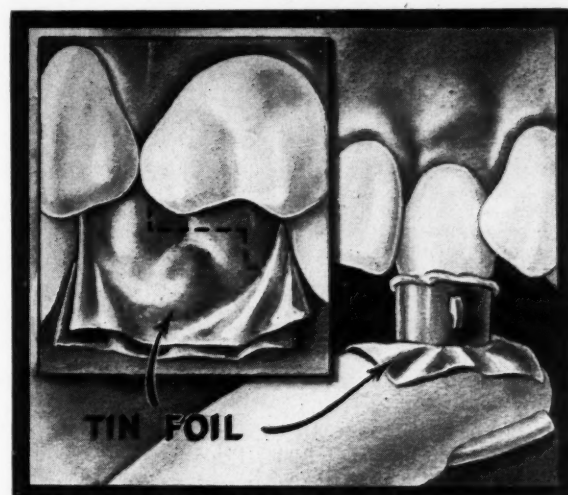


Fig. 5

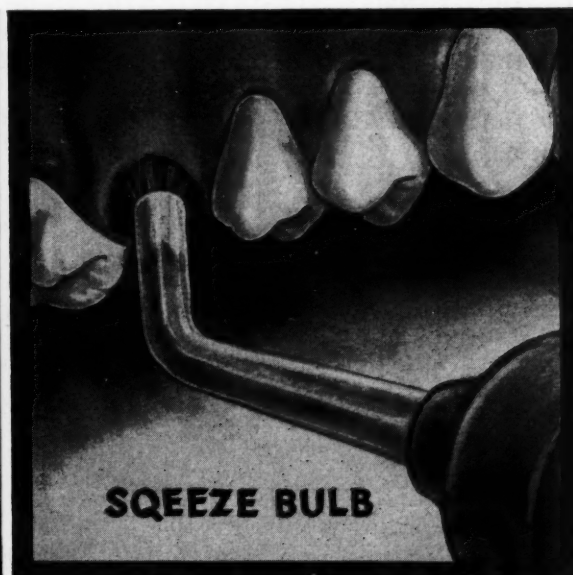
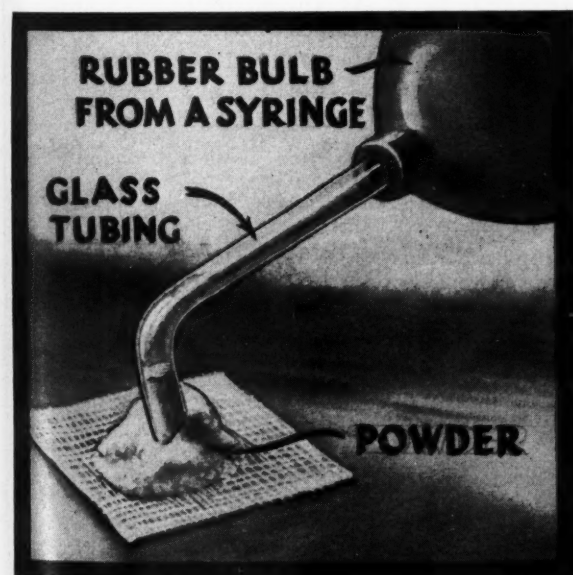


Fig. 6

Clinical and Laboratory Suggestions (Continued)

Contra-Angle Lubrication and Sterilization

Submitted by Captain Howard H. Hazlett (DC) AUS

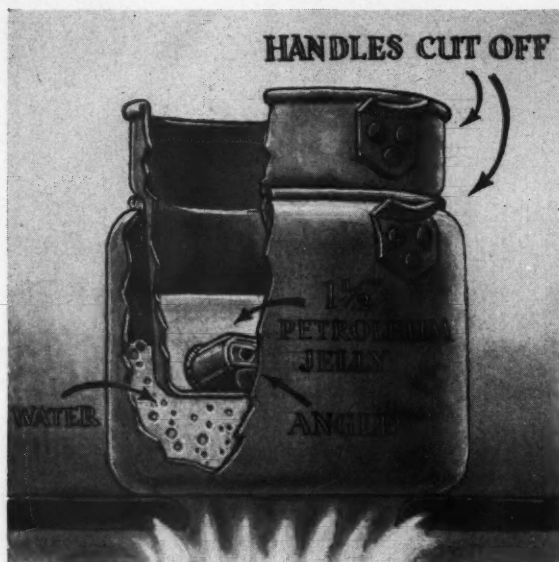


Fig. 7—Contra-angles so often are operated without being sterilized or well lubricated that they wear out in a short time. Commercial sterilizing and lubricating solutions cannot accomplish both results irrespective of the manufacturers' claims. The non-commercial solutions, kerosene, alcohol, and tetrachloride, may clean the contra-angle; but only one, alcohol, will sterilize it. All three remain inside the angle and destroy the lubricating qualities

of any oil present.

By the following simple procedure, the contra-angle is cleaned and lubricated with a hot, heavy oil which will not wash out or permit the ingress of saliva while in use. The method, moreover, increases the life of the handpiece at least 400 per cent.

Equipment

1. Small double boiler with handles cut off (to reduce the danger of upsetting).
2. One pound of yellow petroleum jelly.
3. Hot plate, electric or gas.
4. Strong thumb forceps.
5. Kleenex or paper toweling.

Procedure

1. Place enough petroleum jelly into the top half of the double boiler so that when it melts it will be 1½ inches deep.
2. Place the top of the double boiler over the bottom which contains water.
3. Place the double boiler on the hot plate. Bring the water to a slow, steady boil, and maintain this temperature during the working day. (The melted petroleum jelly will not bubble or boil inasmuch as its boiling point is much higher than that of the water.)
4. Replenish the water in the boiler as required.
5. After cavity preparation is completed, drop the contra-angle into the melted petroleum jelly and leave it there for a minimum of ten minutes.
6. After ten minutes or more, remove the contra-angle with strong thumb forceps. While holding the head of the angle up, tap the forceps on the edge of the boiler to shake all the oil out of the end into which the straight handpiece fits.
7. Wipe the oil off thoroughly with kleenex or paper toweling. As soon as the sterilized and lubricated contra-angle is cool, it can be used for another patient.

EDITOR'S NOTE: A double boiler of heat-resistant glass, such as pyrex, is ideal.

ANNOUNCEMENT OF BOOKS RECEIVED

- PSYCHOSOMATIC DIAGNOSIS, By H. Flanders Dunbar, M.D., Ph.D., First Edition, New York, Paul B. Hoeber, Inc., 1944, Price \$7.50.
- EMOTIONS AND BODILY CHANGES, By H. Flanders Dunbar, M.D., Ph.D., First Edition, New York, Columbia University Press, 1944, Price \$5.00.
- THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY, By W. A. Newman Dorland, Twentieth Edition, Philadelphia, W. B. Saunders Company, 1944, Plain \$7.00, Thumb-indexed \$7.50.
- THE UNIVERSE THROUGH MEDICINE, By J. E. R. McDonagh, M.D., First Edition, New York, Grune & Stratton, 1944.
- TRAUMATIC INJURIES OF FACIAL BONES: AN ATLAS OF TREATMENT, By John B. Erich, M.S., D.D.S., M.D., and Louie T. Austin, D.D.S., First Edition, Philadelphia, W. B. Saunders Company, 1944, Price \$6.00.
- PAIN, Proceedings of the Association for Research in Nervous and Mental Diseases, Prepared under the chairmanship of Harold G. Wolff, M.D., Baltimore, Williams & Wilkins Company, 1943, Price \$7.50.
- PARODONTAL DISEASE—A MANUAL OF TREATMENT AND ATLAS OF PATHOLOGY, By E. Wilfred Fish, L.D.S., M.D., First Edition, London, Eyre and Spottiswoode, Ltd., 1944, Price 18 shillings.
- THE STORY OF THE ALLIED DENTAL COUNCIL: THE STORY OF DENTISTRY IN THE NEW YORK METROPOLITAN AREA, By S. J. Levy, D.D.S., First Edition, New York, Dental History Publishers, Inc., 1944.
- THE DENTIST AND HIS PATIENT, By David Friend; George D. Kudler, D.D.S.; Myron M. Lieb, D.D.S.; Robert Ritt, D.D.S.; and Arthur A. Friend, D.D.S., First Edition, New York, Revere Publishing Company, 1944.
- ESSENTIALS OF ORAL SURGERY, By Vilray Papin Blair, M.D., and Robert Henry Ivy, M.D., D.D.S., with the collaboration of James Barrett Brown, M.D., Third Edition, St. Louis, The C. V. Mosby Company, 1944, Price \$6.50.

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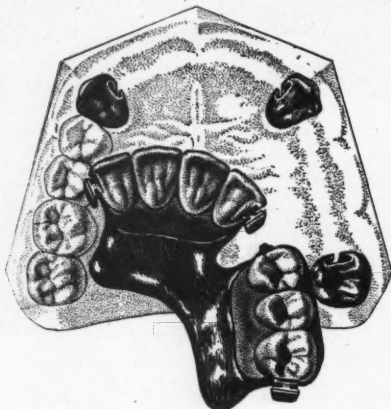
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Contra- Angles



Old Doc Brady Softening Up . . .

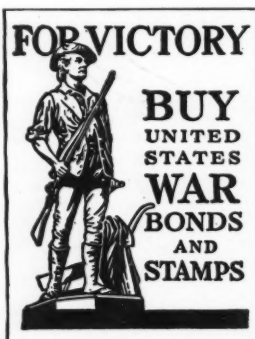
Brady, the health columnist who does not believe in the use of the toothbrush, has become an enthusiast for immediate dentures. He also has given up the campaign to call dentists "dentors." On other occasions we have put Brady on the pan for his attitudes toward dentistry. Now it is with delight that we commend him. Brady's statement of the value of immediate dentures is as clear and accurate as anyone could write:

"There is a more cogent reason for immediate denture service than mere personal appearance, although that may be important, particularly for those whose livelihood is at stake. It is a serious handicap to one personally engaged in business, a profession, or as an artist to have to go without teeth for weeks and months.

"Atrophy, wasting, weakening, are the inevitable consequence of disuse of muscles, and it makes little difference whether the muscles affected are those used in buttoning your collar or those used in masticating your food. The atrophy, unfortunately, involves not only the muscles but also the other structures, tissues, glands, or organs whose functions happen to be related.

"This atrophy begins early, within a week or less, and progresses gradually once the muscles are no longer used regularly. It progresses insidiously, too, so that, if you are inclined to try to ignore your own decline or delinquency, you may remain unaware of the sad withering or degeneration that has overtaken you. You may deceive yourself that you are suffering no serious harm from going toothless, but after all you

(Continued on page 34)



*"Young man,
my dentures
FIT!"*

*Indeed they
do Doctor,
but...*

**... here's why Denture Powder
helps DENTURES THAT FIT!**

In much the same way as
the shock absorber on

the landing wheels of a
Flying Fortress accepts, ab-
sorbs and dissipates the
shock, so Dr. Werner's
Powder supplies a soft,
protective, resilient cush-
ion. It accepts, absorbs and
dissipates the shock of the
excess bite, preventing in-
jury to the ridge or tissues.

**Why more Dr. Werner's Denture Powder
is used than any other in the world**

SOLUBLE—Because Dr. Werner's is completely soluble, free of foreign matter, it sets up a resilient cushion that permits denture to ride close to tissues . . . does not establish bulk to destroy perfect fit.

NON-INCORUSTATING—Daily cleaning will dissolve and remove *all* traces of Dr. Werner's, leaving no residue to incrustate in ridge areas. Insoluble powders can set up uneven pressure, cause mal-occlusion, the forerunner of dread pendulous tissue.

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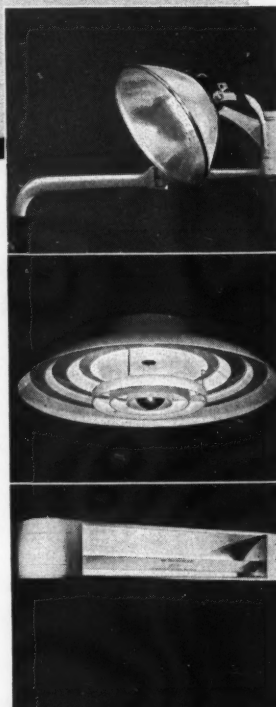
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The **CASTLE "U-V"** (Ultra-Violet) helps make your office a safer place to work. Placed at a 7 foot height in the office, it kills many of the bacteria borne upward by convection currents.

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. . . says the Axis

It's American sociability! We love to get together and . . . *talk*. We talk about our work . . . about what we see, or hear from others . . . about latest letters from our boys.

Then others repeat our words to others . . . and others . . . and others . . .

From 10 . . . 50 . . . 200 random phrases about our war production or our boys in uniform, expert Axis agents piece together one important military secret which *you* may help betray . . . just by being sociable!

Don't repeat even *little* things about our war program unless they've been published or broadcast. Think *before* you talk!

must acknowledge that it isn't just because they don't look pretty that the government rejects men from military service when they haven't enough teeth to masticate food.

"More or less atrophy or degeneration inevitably occurs whenever an individual goes for any length of time minus one or more teeth or dentures to take the place of the missing teeth. The inevitable effects of such crippling are: (1) Impairment of digestion and consequent malnutrition and early decline of health, which is tantamount to premature old age; and (2) a sad sag in facial lines and loss of whatever youthful symmetry or good looks the stupe may have had in his or her prime."

On the matter of "doctor versus dentor," Brady has capitulated without a struggle. Here is his declaration on the subject: "I have now relinquished and abandoned the attempt to persuade dentists to use that unmentionable trade name I proposed for them instead of 'Doctor.' Believe it or not I was ashamed and embarrassed when, in revising the booklet 'Save Your Teeth' I found that name on nearly every page."

The next thing we know, Doc Brady will be buying himself a toothbrush and will be recommending its use to his readers. The Old Boy is getting better.

"I Mean" . . .

An expression that is meaningless and unnecessary has recently infected the conversation of many people. The use of "I mean" as an interpretive sandwiched in between utterances is a sign of poverty of expression. To say something and then stick in an "I mean" as a prelude to saying the same thing again means that the speaker admits his own lack of clarity in the first try or thinks his listener is so stupid that he did not catch on the first time. To say "Mrs. Slocum is a sourpuss; I mean, Mrs. Slocum is not a honey," is to say the same thing twice.

People who suffer from the "I mean" plague are reluctant to give up the conversational throne and, rather than relinquish the place to another,

drop in an "I mean" to help keep the tongue wagging while they think up a transition to another subject. This expression is as trite and meaningless and in the same class as "You see?" "Get me?" and "See what I mean?"—queries directed by vague conversationalists who doubt their own effectiveness of expression or the mentality of their listeners.

We all suffer at times from a tongue that functions in advance of our cerebrum. We blurt out before we think. I suppose this is some form of fear. We fear to keep quiet lest somebody thinks we have no thoughts—so our quick-trigger tongues prove that we have none. There is no stigma attached to keeping quiet. Our troubles usually come from talking too much and too soon.

It seems that "I mean" and other banalities are more likely to be heard in the conversations of the educated and the would-be intellectuals than in the speech of the uneducated and the rustic. The people who lack linguistic skill are more likely to express themselves tersely, to the point, and with a conservation of words. They do not have many words to use and the ones they have they use sparingly and effectively. The educated and the "clever," on the other hand, frequently suffer from logorrhea and lingual exhibitionism. Instead of speaking directly and to the point, they talk too long and with too many words. Here is an example from a professor of sociology:

I believe that we were in agreement that the current social scene presents many perplexing problems to members of the several professions because of the highly specialized and technical character of their education and practice. This has resulted in a condition which borders upon a "trained incapacity" to treat with questions which fall outside the range of their specialized competency. As a consequence, the dental profession, like other highly functional groups, is in need of a fund of knowledge concerning the changing social world. In the light of such knowledge, the profession might more intelligently and effectively address the problem of making available its services under conditions of optimum value to both society at large and the profession itself.

Our recent experiences among dental and other professional groups lead us to believe that programs of study can be developed in cooperation with institutions of higher learning which would prove invaluable to, and command the interest of, members of the dental profession. There is

(Continued on page 36)

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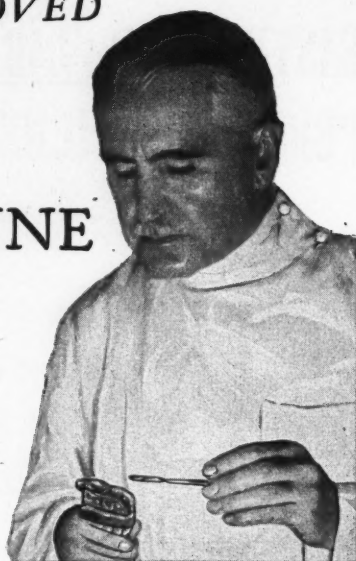
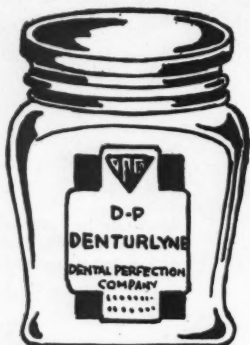
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NEXT OF KIN . . .

talked too much!

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But Axis espionage relies on millions of sociable Americans telling friends these little things. Hundreds of such random phrases . . . pieced together . . . reveal *big* military secrets!

Don't repeat even little things about our war effort unless they've been published or broadcast. Think *before* you talk!

a sufficiency of evidence that dentists and other health specialists are eager to be supplied with information concerning our social life which will make possible their more effective participation in the formulation of public policy. It is not our purpose to suggest that such courses should or would set forth what the social policy of the profession on various questions ought to be, but rather to supply information and considerations, and to promote discussion in the sight of which the organized profession might reach its own freely determined position on questions of social moment.

What the professor was trying to say, I suppose, was that dentists, in common with everybody else, should know more about what is going on in the world; I *mean*, they should be better informed.

"Doctor Fishbein Retreats" . . .

According to *The Chicago Sun*, Doctor Fishbein and the American Medical Association are in some sort of headlong retreat. It is true that the American Medical Association has been advocating voluntary insurance plans to supply the funds for medical care. And it is also true that the American Medical Association is in opposition to the compulsory plans for health insurance that are provided for under the Wagner-Murray-Dingell bill. Here is a copy of the editorial from the *Sun*:

Maybe the American Medical Association, like the Supreme Court, reads the election returns. Doctor Morris Fishbein told the National Physicians Committee this week that the profession must beat the government to the punch by rapidly developing plans for voluntary group medical care.

It seems only yesterday that Doctor Fishbein was denouncing any changes in medical economics as "socialism and communism inciting to revolution." His new position marks an important retreat. Organized medicine apparently no longer regards past methods of financing medical care as sacrosanct; no longer denies the need for reform; no longer contends that health insurance menaces the Constitution and the American way of life.

This does not mean that the American Medical Association has withdrawn its opposition to a national scheme of comprehensive medical insurance as contemplated by the Wagner-Murray-Dingell bill. By accepting group medicine, however, Doctor Fishbein has given the public a stronger reason than ever for enacting such a scheme.

Voluntary plans are fine as far as they go. But experience shows that they give limited coverage to a limited section of the population at relatively high cost to the individual. If the principles of group practice and prepayment are sound (as Doctor Fishbein now admits), there is no case left against realizing them in their most effective form. And that form is nationwide medical insurance, which dis-

(Continued on page 39)

tributes the risks broadly, gives complete coverage to all, and compensates for variations of income as between regions and individuals. Such a system can be set up with adequate safeguards against "political medicine" if the doctors will help set it up instead of blindly fighting it.

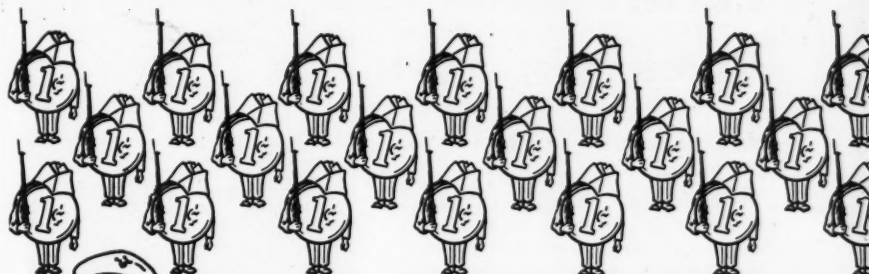
Before we get too far in this discussion, let's see exactly what the American Medical Association is fighting for. The American medical profession and the American dental profession believe that there may be changes in the methods for the payment of professional services but that the methods of rendering the service are satisfactory, for the most part, as they are. Medicine and dentistry stand strong on the fundamental principle that free choice should be allowed by the patient to pick his dentist and physician and by the practitioner to turn down the patient if he so chooses. We also believe that there is much of therapeutic value that comes from an understanding personal relationship between practitioner and patient, and that there is no substitute for this rapport, this feeling of confidence, this mutual trust. The professions feel that third parties cannot set up the standards for practice. Perhaps the American Medical Association has been too conservative and perhaps the Association has not done a good job in public relations. The fact is, however, that the greatest scientific advances in medicine and dentistry in the world have been made in the United States and not in the European countries where compulsory health insurance has been in existence for many years.

The Great Moment . . .

This is the first time I have ventured into the field of motion picture reviewing. I am sure that the job will be inadequate. THE GREAT MOMENT purports to be a picture from the book by René Fülöp-Miller, TRIUMPH OVER PAIN. It has suffered the usual emasculations (Pardon the pun on emasculations; there seems to be little of such in Hollywood).

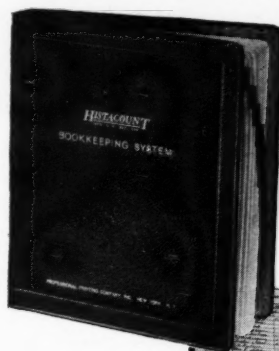
Paramount has, nevertheless, produced a picture that shows William T. G. Morton during the travail of

(Continued on page 40)

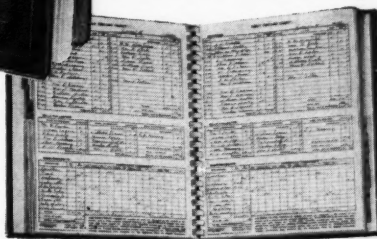


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In your **ORAL HYGIENE** this month

Little Flower Gives New York Dentists Jitters

Neglected paper-plans for a National Health Plan covering medical and dental care may prove to be tinder for a sweeping conflagration, when Mayor LaGuardia tosses his zealot's torch into the dry-as-dust accumulation.

Individually, dentists have been slow to recognize their personal responsibility, and collective duty, to work out a practical plan which will protect their patients, their practices, and the public.

Mayor LaGuardia has worked out *his own* plan—without benefit of consultation with medical or dental societies—and is determined to put it into action in New York City . . . Further threat is that this plan received endorsement from Henry Kaiser, the late Alfred E. Smith, and the late Wendell L. Willkie . . . and bids fair to be a pattern for a national plan.

Michael Peyser, D.D.S., analyzes the Mayor's plan, points out that good dentistry probably can't be done at the low fees the Mayor may demand, urges dentists to recognize the overwhelming trend toward *some* national health plan, and to *act* in formulating a plan which will protect the public as well as the dentists.

★ ★ ★

Doctor John Jacob Posner—always an interesting writer—and an authority on anesthesia, says, "After sixty years, our profession is still muddling over the art of local anesthesia." He urges that local anesthesia be given more prominence in dental school curricula, and that the dental profession exert greater care in following the proper technique.

★ ★ ★

You will not want to miss the article, "Doctors' Bills First"—reprinted from *Newsweek*—which outlines the plan of the Massachusetts Bankers' Association for real first-aid to the professional man's hitherto inevitable accumulation of slow-paying accounts.

★ ★ ★

You'll smile over the style of "A



G.I. Talk on Preventive Dentistry," but you'll agree that Lieutenant William Harmelin (DC) talks to *his* patients as you would *like* to talk to *yours* . . . and gives them all of the basic rules of dental health in eleven breezy paragraphs.

★ ★ ★

Doctor M. Webster Prince, in his article, "No Capable Dentist Will Lack for Patients," and Doctor E. A. W. Montgomery, in "Rebuilding a Practice on Personalized Service," address returning service dentists primarily . . . but don't let that prevent your reading these articles if you're *not* a service dentist—for there are pointers for civilian dentists too.

★ ★ ★

"Why Rely on Dentures?," by Bruce Martin, D.D.S., and "The Small-Town Dentist Has His Troubles," by S. J. Levy, D.D.S., discuss practice problems common to dentists all over the country.

★ ★ ★

Beside these eight articles, there are the eight regular departments, *plus* an editorial you won't want to miss—especially if you're in the service.

★ ★ ★

Even if you're packing sixteen hours' work into your office day, you can still keep abreast of new developments in dentistry, by reading *Oral Hygiene* in five-minute snatches . . . The magazine is boiled down to wartime terseness to make your reading time yield the maximum returns.

the development of ether. At times the picture descends to the level of slapstick comedy which includes everything but the pie throwing. The producers couldn't resist some of the old dental gags, showing the pain and butchery and the howling in the dental office.

I would say that the picture missed the character of Horace Wells entirely. It was Wells, after all, who had the courage to have general anesthesia demonstrated upon himself. Morton is made to appear as a demiquack, although the picture does give him credit for the application of ether anesthesia and shows that Jackson and Long were not entitled to credit. All in all, I would say that *THE GREAT MOMENT* is a fairly accurate story of the discovery of ether anesthesia.

Last winter the Paramount Company gave a preview of the picture for some of the people particularly interested in the subject. At that time, in the company of a number of other dentists, I saw the picture. The audience on that occasion was serious-minded, free from tittering and giggles. The pay-at-the-box-office audience, however, reacts in an entirely different style. On the first showing I did not realize how much slapstick comedy there was in the picture.

I suppose that every dentist should see the picture, if for no other reason than to defend himself against the inquiries of his patients who may ask him something about the history of general anesthesia and the part that dentists played.

The picture, *THE GREAT MOMENT*, does not record the magnitude of the human emancipation brought about by Wells and Morton, the dentists. Recently two eminent physicians have expressed the spirit in articles in *Current Researches in Anesthesia and Analgesia*.¹ Doctor Chauncey D. Leake has written:

Wells undoubtedly deserves full commendation for his recognition of the anesthetic power of nitrous oxide. However, it is clear that Wells would have been more successful and might have been privileged fully to have enjoyed the praise he craved.

¹Editorials, *Current Researches in Anesth. & Analg.* 23:262-264 (November-December) 1944.

(Continued on page 45)

had he been willing to study nitrous oxide more carefully under experimental conditions. He should have learned precisely how much to administer and under what circumstances. This he could have done readily had he been willing to take the time and make the effort. Unfortunately, experimental medicine had not yet become a matter of much interest in this country. Wells really was a martyr to his time.

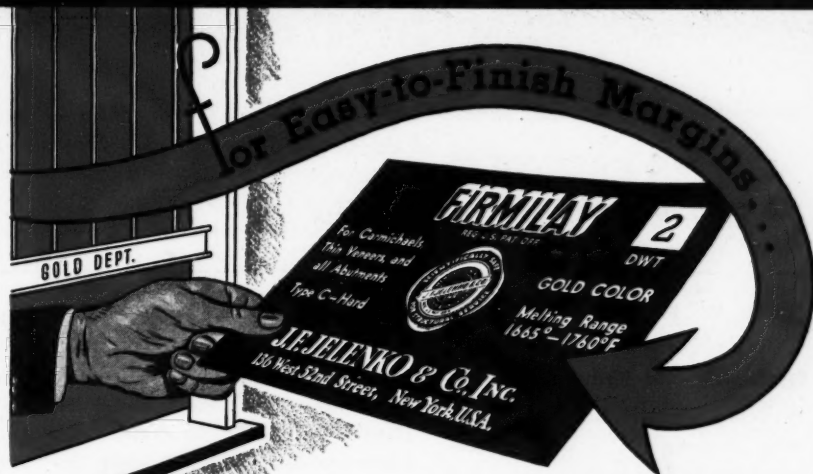
The editor of *Current Researches in Anesthesia and Analgesia*, Doctor Howard Dittrick, has made a careful estimate of the number of persons benefited by general anesthesia in the last forty years. He estimates that general anesthesia is used throughout the world for 22,000 persons each day. This represents a total of 6,600,000 persons a year, or 264,000,000 persons benefited in the last forty years. In Doctor Dittrick's words, "This minimum conjecture of the number of patients to whom Wells 'gave sleep to those suffering and in pain' is sufficiently vast to acclaim him as one of the world's greatest emancipators."

So THE GREAT MOMENT has been prolonged and has reached into the lives of millions of human beings, and will continue to relieve suffering for all time to come.

Speaking of Polls . . .

Bennett Cerf, conductor of the refreshing column *TRADE WINDS* in *The Saturday Review of Literature*, credits war correspondent Quentin Reynolds with the story of the enterprising opinion sampler and poll taker who conducted a questionnaire study to determine why men get up in the middle of the night. The poll revealed that only 2.4 per cent really had to get up, 1.6 per cent went prowling around the kitchen, and the other 96 per cent got up to go home.—E. J. R.

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Perlèche: Its Nosologic Status

CLARK W. FINNERUD, M.D., Chicago

Etiologies and Symptoms

Perlèche, a maceration with transverse fissuring of the oral commissures, has to date been regarded as a disease entity of infectious origin. Some claim it to be of bacterial etiology, usually streptococcic or staphylococcic; others say it is of micotic origin, usually monilial.

Identical cutaneous changes, with or without associated skin, tongue, scleral, and systemic manifestations, have been demonstrated repeatedly, experimentally and naturally occurring, in vitamin deficiency diseases. These changes occur chiefly in ariboflavinosis, but apparently also in nicotinic acid and pyridoxine deficiencies.

The same fissuring occurs at the mucocutaneous juncture of the lips in persons with malocclusion as the result of ill fitting dentures, and in the aged in whom atrophy of the tissues has caused some overhanging of the upper lip at its lateral margins.

In all instances the cutaneous changes in the vicinity of the mouth angles are almost identical, consisting merely of a maceration with transverse fissuring in this area, popularly referred to as "cracks at the corners of the mouth." The condition has been designated by a variety of terms, including interlabial dermatitis, angular stomatitis, and oral commissural intertrigo.

Conclusions

Personal observations, together with a study of the literature, indicate that perlèche should no longer be regarded as a disease entity but rather merely as a cutaneous symptom occurring in the form of an intertrigo of the labial commissures, analogous to intertrigo elsewhere and of manifold etiology. Because of the

necessary movements of this mucocutaneous juncture, the localized dermatitis usually is associated with transverse fissuring. It probably becomes proper, therefore, to differen-

tiate the different types of perlèche as follows:

1. Infectious Perlèche: Those which are considered to be primarily of bacterial or mycotic origin.

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2. Malocclusion or Mechanical Perlèche: Those seen in elderly persons and usually resulting from ill fitting dentures.

3. Vitamin Deficiency Perlèche: Those of hypovitaminotic or avitaminotic origin.

4. Idiopathic Perlèche: Those in which no etiologic factors can be determined.

It is suggested that the word perlèche, taken from the French word *pourlécher*, to lick, be retained as indicative of this symptom through

respect for the person who originally described and named this cutaneous change, in view of the common usage of the word to denote transverse fissuring of the oral commissures, and because of its etiologic meaning and its brevity.

—From Finnerud, C. W.: Perlèche: Its Nosologic Status, *Journal of the American Medical Association*, 126: 737 (November 18) 1944 (The Chairman's Address, Section on Dermatology and Syphilology).

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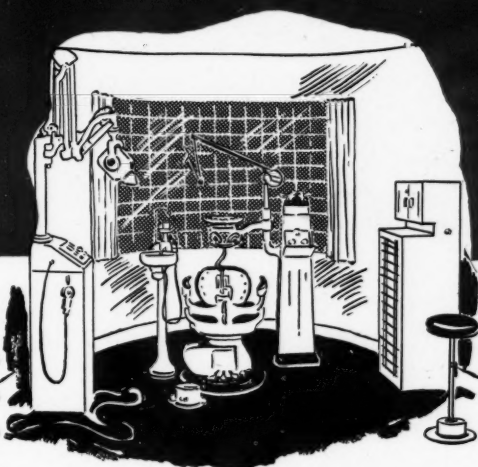
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the underarm area in order to emulsify or saponify the fat content of the perspiration stain. After this the area must be washed thoroughly to prevent the salt and fat from remaining in the garment on drying.

—From Useful Hints to Dental Nurses, *South African Dental Journal*, 18:206 (October) 1944.

DENTAL MEETING

Dates

The Greater Philadelphia Dental Society, annual meeting, Benjamin Franklin Hotel, Philadelphia, January 31-February 2, 1945.

California State Board of Dental Examiners, regular meeting, February 26, San Francisco, College of Dentistry, University of California; in Los Angeles June 4, and in San Francisco at Physicians & Surgeons College of Dentistry on August 6. For information, write to Doctor Kenneth I. Nesbitt, 515 Van Ness Avenue, San Francisco.

Annual March Meeting of the Cincinnati Dental Society, Hotel Netherland Plaza, Cincinnati, March 18-20.

The Thomas P. Hinman Midwinter Clinic, Municipal Auditorium, Atlanta, Georgia, March 25-27.

Massachusetts Dental Society, annual meeting, Hotel Bradford, Boston, April 30-May 3.

Pennsylvania State Dental Society, seventy-seventh annual meeting, Bellevue-Stratford Hotel, Philadelphia, May 1-3.